A Project Report On

COMMUNITY SERVICE PROJECT

Submitted in partial fulfillment of requirements to

JAWAHARLAL NEHRU TECHNOLOGY UNIVERSITY KAKINADA

For the award of the degree

of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE & ENGINEERING

Submitted By

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Under the esteemed guidance of

Dr.V.J.Devaraaj (M.Sc., M.Phil.MBA, PhD)

Head of the Department

Department of Basic Science & Humanities

V.K.R, V.N.B & A.G.K COLLEGE OF ENGINEERING

(An ISO 9001:2015 certified Institution; Sponsored by General & Technical Education Society, Gudivada)

Affiliated to JNTU-KAKINADA & Approved by AICTE, New Delhi Gudivada- 521301, Krishna District, Andhra Pradesh

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

V.K.R, V.N.B & A.G.K COLLEGE OF ENGINEERING

(Approved by AICTE-New Delhi, Recognized by Govt. of A.P & Affiliated to JNTUK KAKINADA)

GUDIVADA-521301, Krishna District, Andhra Pradesh.

CERTIFICATE

This is to certify that the entitled of "COMMUNITY SERVICE PROJECT" is the bonafide record of work carried out by B.Sathwik (22NH1A0520), K.Abhishek (22NH1A0559), K.Neeraj Babu (22NH1A0552), A.Ashraf (22NH1A0502), A.Shanmukha (22NH1A0505), K.Divya Sri(22NH1A0550), Ch.Santhi Sri(22NH1A0525), K.Padma Sri(22NH1A0518), K.John Rickets(22NH1A0562), K.Jayanthi(22NH1A0556). My guidance of supervision in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Computer Science & Engineering of Jawaharlal Nehru Technological University, Kakinada.

Project Guide

Dr.V.J.Devaraaj (M.Sc., M.Phil. MBA, PhD)

Head of the Department

Dept. of Basic Science & Humanities

Head of the Department

Dr. G.VENKATA RATNAM (M.tech, Ph.D.)

Professor & HOD

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Dr.S.H.V.Prasada Rao, M.tech., Ph.D.
Principal

Gudivada,
Date:

Ref: VKR/CSP/2022-23/01

To
The President,

_____
_____
_____

Sir,

Sub: VKR, VNB & AGK College of Engineering, Gudivada - Community Service Project (CSP) – Requesting permission to do CSP program in your village-Reg

▪▪▪▪

I have to inform you that, according **to JNTUK, Kakinada** R20 curriculum **"Community Service Project (CSP)"** submitted in the partial fulfillment of requirement for the award of B.Tech degree. In this regard our students selected your village to do CSP program from **03/7/2023 to 15/7/2023** total l of two weeks. Kindly grant permission to our students to do CSP Program in your village.

Thanking You Sir,

Yours faithfully,

CERTIFICATE:

This is to certify that this project work titled "**SAFETY & SECURITY"** is the bonafide work of **B. Sathwik (22NH1A0520), K. Abhishek (22NH1A0559), K. Neeraj Babu (22NH1A0552), A. Ashraf (22NH1A0502), A. Shanmukha (22NH1A0505), K. Divya Sri (22NH1A0550), Ch. Santhi Sri (22NH1A0525), B. Padma Sri (22NH1A0518), K. John Rickets (22NH1A0562), K. Jayanthi (22NH1A0556)**, submitted in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering J.N.T.U, KAKINADA. During the Academic Year 2022-2023.

ACKNOWLEDGMENT

The satisfaction that accompanies the successful completion of any task would be incomplete without the mention of people who made it possible and whose constant guidance andencouragement crown all the efforts with success.

We express sincere thanks to project guide**, Dr.V.J.Devaraaj** (M.Sc., M.Phil.MBA, PhD) **Head of the Department** for his innovative idea, dedicated support and encouraging us constantly throughout this project venture. We are also grateful for his constant availability and detailed supervision. Furthermore, we are also grateful his keen interest in this project.

We feel elated to extend our floral gratitude to **Dr.G.Venkata Ratnam** (M.tech, Ph.D). Head of the Department of Computer Science & Engineering, for his encouragement all the way during the analysis of the project. His annotations and criticisms are the key behind the successful completion of the project work.

We would like to take this opportunity to express our profound sense of gratitude to our beloved Principal **Dr. S. H. V. PRASADA RAO** M.tech., Ph.D. for providing us all the required facilities.

We thank the Teaching and Non-Teaching staff of Computer Science & Engineering Department who helped directly and indirectly in completing of our Project Work.

Above all, we thank our parents. We feel deep sense of gratitude for our family who formed part of our vision. Finally, we thank one and all that have contributed directly or indirectly to this thesis

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CHAPTER - 1

- Abstract
- Definition
- Introduction

- ABSTRACT :

Latest technological trends lead towards systems connected to public networks even in critical domains. Bringing together safety and security work is becoming imperative, as a connected safety-critical system is not safe if it is not secure. The main objective of this study is to investigate the current status of safety and security co-analysis in system engineering by conducting a Systematic Literature Review. The steps of the review are the following: the research questions identification; agreement upon a search string; applying the search string to chosen databases; a selection criterion formulation for the relevant publications filtering; selected papers categorization and analysis. We focused on the early system development stages and identified 33 relevant publications categorized as: combined safety and security approaches that consider the mutual influence of safety and security; safety informed security approaches that consider influence of safety on security; security informed safety approaches that consider influence of security on safety. The results showed that a number of identified approaches are driven by needs in fast developing application areas, e.g., automotive, while works focusing on combined analysis are mostly application area independent. Overall, the study shows that safety and security co-analysis is still a developing domain.

- **DEFINITION :**

Safety engineering and security engineering as a way of addressing safety/security challenges have developed separately. While the malfunctioning behaviour addressed by safety engineering was the primary concern in such systems, the increased risk of intentionally caused harm required additional focus on security engineering. Nowadays, there is a need to integrate safety and security engineering in such a way that the unreasonable risk of harm due to either malfunctioning or malicious intent is adequately addressed. This is particularly important for highly connected modern safety-critical systems that cannot be considered safe unless they are secure at the same time. The way in which this integration is performed significantly influences the efforts needed to design a safe and secure system. For example, safety and security solutions do not always support each other, e.g., encrypting a message needed for security reasons increases the time needed to deliver the message, which may increase the delivery time over the required safety threshold. If safety and security are being treated separately and their integration takes place at later development stages, it implies greater effort to harmonise different solutions.

- INTRODUCTION:

With ubiquitous presence of technology and our increased reliance on it, the risk of harm we face due to such technology increases as well. The harm we are exposed to is not just direct physical harm due to for example car accidents, but it includes e.g., financial, environmental, emotional harm, which can also lead to physical harm. Traditionally, different causes that may lead to harm have been treated separately in safety-critical system engineering. For example, unreasonable risk of harm due to malfunctioning behaviour of technological systems is addressed under the umbrella of functional safety, where functional safety is described as “a freedom from unacceptable risk” [1]. With increased connectivity of these systems, the risk of undesirable consequences has increased due to the possibility of an adversary intentionally causing the undesirable consequences. The risk of such intentionally caused harm through the technological systems has been generally addressed by security solutions, which were traditionally analysed and proposed separately from safety solutions [2]. Security is often defined as a system property that allows the system “to perform its mission or critical functions despite risks posed by threats”

CHAPTER – 2

→ COMMUNITY SERVICE PROJECT

- WHAT IS COMMUNITY SERVICE PROJECT?
- EXAMPLES FOR COMMUNITY SERVICE PROJECT
- BENEFITS FOR COMMUNITY SERVICE PROJECT

- **What is community service project?**

Community service is work done by a person or group of people that benefits others**.** It is often done near the area where you live, so your own community reaps the benefits of your work. You do not get paid to perform community service, though sometimes food and small gifts, like a t-shirt, are given to volunteers.

Community service can help any group of people in need: children, senior citizens, people with disabilities, English language learners, and more. It can also help animals, such as those at a shelter, and it can be used to improve places, such as a local park, historic building, or scenic area as well**.** Community service is often organized through a local group**,** such as a place of worship, school, or non-profit organization. You can also start your own community service projects.

Some students are required to complete community service as part of a class requirement in order to graduate high school or become a member of certain organizations, such as the National Honor Society. Adults can also participate in community service as a way to help others or if they are ordered to do so by a judge.

- **Examples for Community Service Project:**

There are hundreds of ways to participate in community service, depending on your skills and interests. Some common community service examples include:

Working with schoolchildren:

Tutoring children after school, collecting school supplies to donate, planting a school garden.

Working with senior citizens:

Visiting residents of a retirement center, delivering meals to senior citizens, driving them to appointments.

Improving the environment:

Holding a recycling contest, planting trees, creating a new trail at a nature center.

Helping low-income people:

Passing out food at a soup kitchen, collecting used clothes to be donated, making first aid kits for homeless shelters.

Benefits from community service project:

There are many benefits of participating in community service, and some of the most important ones are listed below.

Have the opportunity to help others: This is often the most important benefit of community service. Participating in it gives you the opportunity to know that you are improving someone's life and making your community better, and you get to see the direct impact of your work.

Gain hands-on experience: You can learn a lot of skills while performing community service such as construction, painting, customer service, and medical skills. You can also include your community service work on your resume.

Learn about different careers:

Sometimes you can focus your community service in a field you may want to work in down the road. Some examples of this include volunteering at an animal shelter if you are thinking about becoming a veterinarian, working at a hospital if you want to be a doctor, or volunteering in a museum if you like history. The experience gained from community service can help you get an internship or job in the future, and it also gives you the opportunity to see how much you would really enjoy a particular career.

Personal growth: Doing community service has personal benefits as well. It often makes participants more organized, responsible, and compassionate, which are all good qualities to have, as well as qualities that both colleges and employers like to see in applicants.

Gain new friends: A final benefit is that you can meet a lot of great people while doing community service. Community service is often done in groups, so it's easy to make friends with the people you are working with. You may also become friends with the people you are helping, especially if you volunteer at the same place regularly.

Your school or groups you belong to: This can include clubs, places of worship, community centers or any other organizations you are a member of. To find community service opportunities, check their website, bulletin board, or newsletter. If you are a student, your school may also have a community service club that makes it easier to get involved.

Places where you'd like to volunteer: If you have a specific place where you'd like to perform community service, like a hospital or animal shelter, contact them and ask if they take volunteers.

CHAPTER – 3

- ABOUT VILLAGE

ABOUT THE VILLAGE

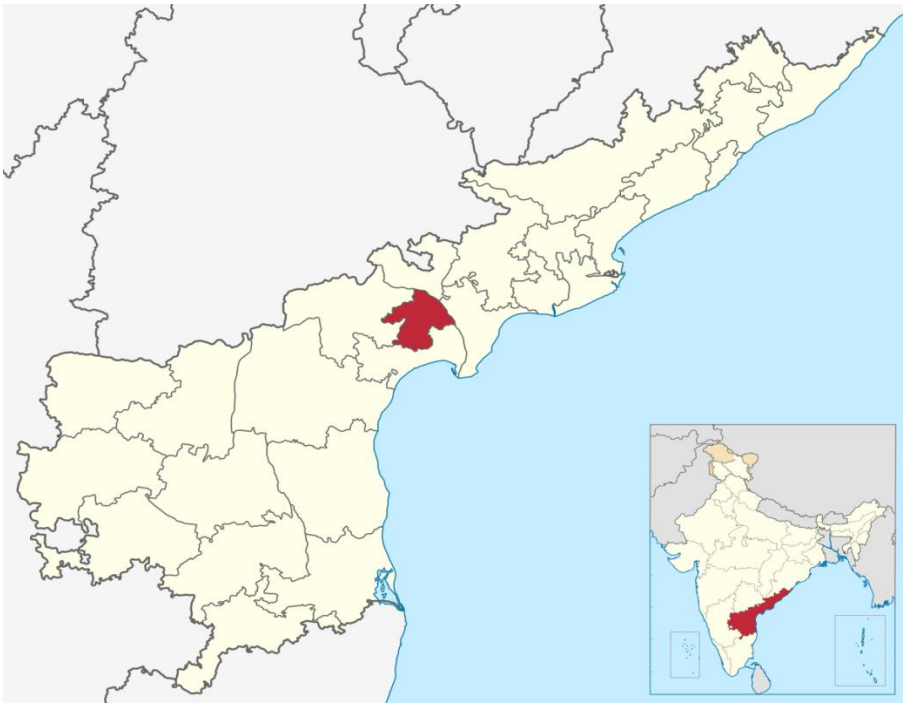
Rimmanapudi is a Village in Pamarru Mandal in Krishna District of Andhra Pradesh State, India. It belongs to Andhra region . It is located 27 KM towards North from District head quarters Machilipatnam. 3 KM from Pamarru. 340 KM from State capital Hyderabad

Rimmanapudi Pin code is 521157 and postal head office is Pamarru (Krishna). Addada (2 KM) , Penjendra (3 KM) , Komaravolu (3 KM) , Polimetla (4 KM) , Pasumarru (4 KM) are the nearby Villages to Rimmanapudi. Rimmanapudi is surrounded by Gudlavalleru Mandal towards East , Gudivada Mandal towards North , Movva Mandal towards South , Pamidimukkala Mandal towards west .Gudivada , Pedana , Machilipatnam , Hanuman Junction are the near by Cities to Rimmanapudi.

Demographics of Rimmanapudi

Telugu is the Local Language here. Total population of Rimmanapudi is 1181 .Males are 588 and Females are 593 living in 330 Houses. Total area of Rimmanapudi is 333 hectares..[1]

MAP:



CHAPTER - 4

- GATHERING INFORMATION FROM VILLAGERS
- INTERACTING WITH VILLAGERS

S Search for Hazards
A Analyse the risk
F Find the cause
E Eliminate the cause
T Tell others
Y You are safe

➢ Gathering Information From Villagers :

Safety:- The state of being away from hazards caused by natural forces or human errors randomly. The source of hazard is formed natural forces and/or human errors.

Security The state of being away from hazards caused by deliberate intention of human to cause harm. The source of hazard is posed by human deliberately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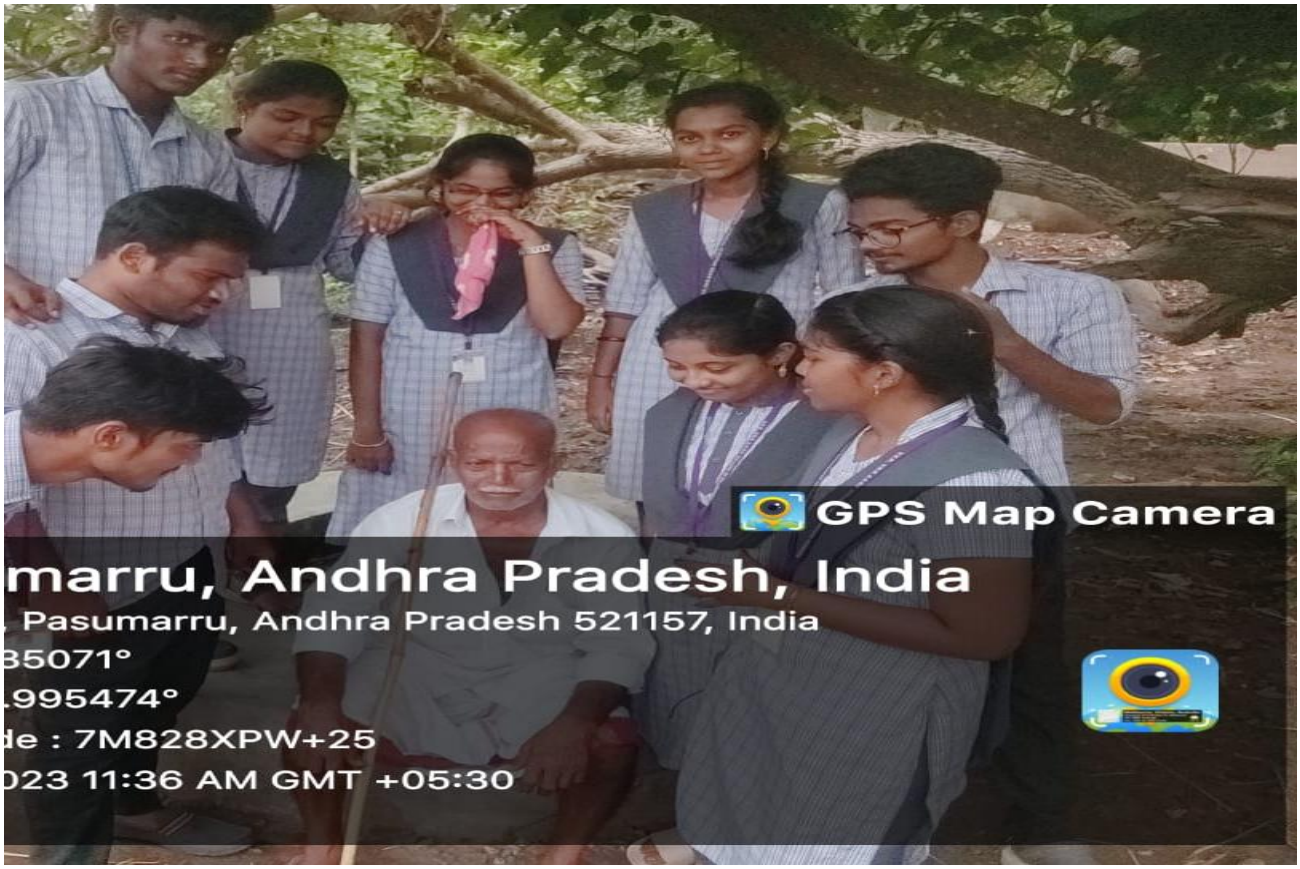
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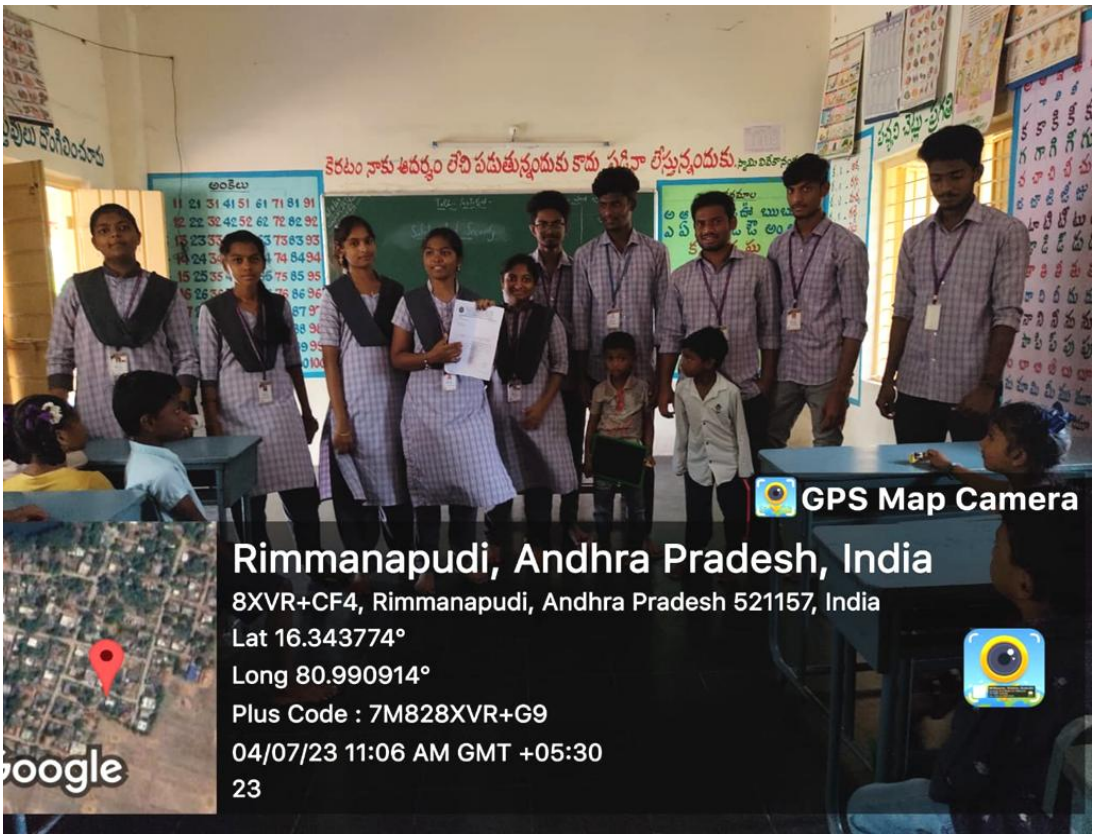
➢ INTERACTING WITH VILLAGERS :

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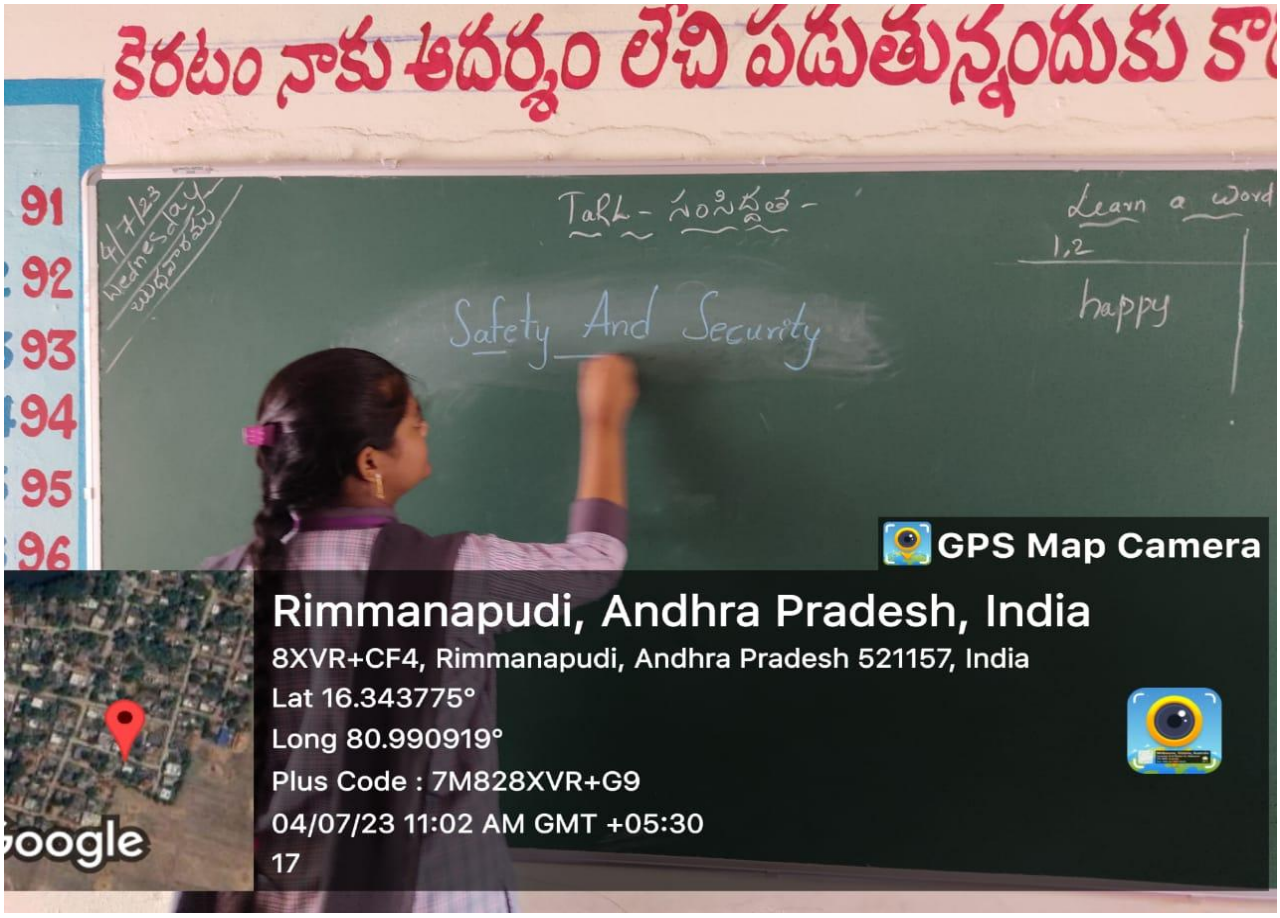
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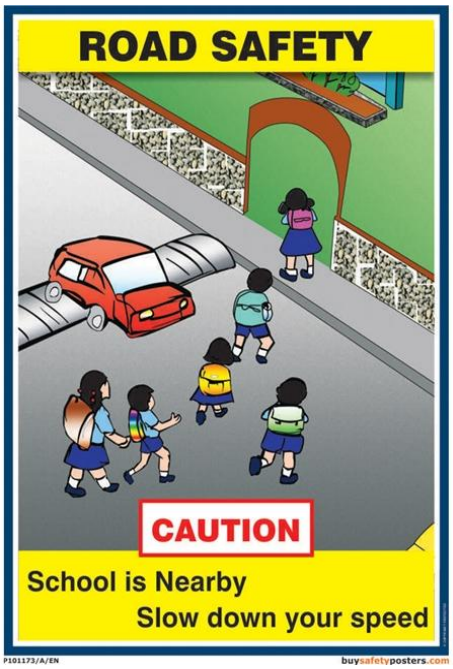
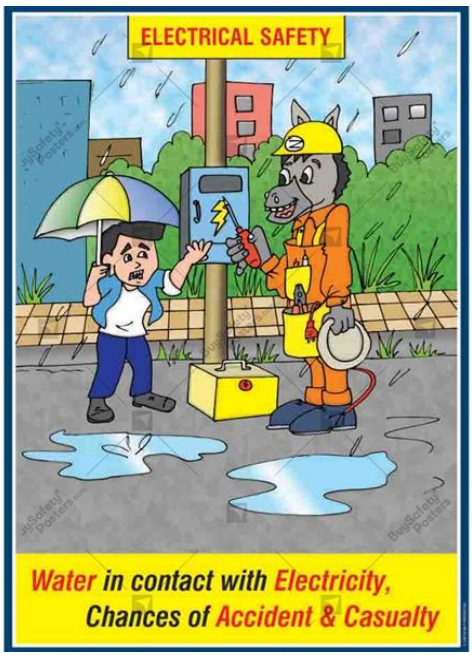
CHAPTER-5

- Road Safety & Security
- Health Safety & Security
- Electric Safety & Security





- **Road Safety & Security :**

Safety can be improved in various simple ways to reduce the chance of a crash occurring. Avoiding rushing or standing in unsafe places on the bus or coach and following the rules on the bus or coach itself will greatly increase the safety of a person travelling by bus or coach. Various safety features can also be implemented into buses and coaches to improve safety including safety bars for people to hold onto.

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- **Health Safety & Security :**

Health security is a concept that encompasses activities and measures across sovereign boundaries that mitigates public health incidents to ensure the health of populations.[1] It is an evolving paradigm within the fields of international relations and security studies.[2] Proponents of health security posit that all states have a responsibility to protect the health and wellbeing of their populations. Opponents suggest health security impacts civil liberties and the equal distribution of resources.


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➢Electric Safety & Security:

Electrical safety is a system of organizational measures and technical means to prevent harmful and dangerous effects on workers from electric current, arcing, electromagnetic fields and static electricity. The electrical safety develops with technical progress. In 1989 OSHA[1] promulgated a much-need regulation in the General Industry Regulations. Several standards are defined for control of hazardous energy, or lockout/tagout.


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CHAPTER - 6

WEEKLY REPORT

DAY-1

Today is the first day of our Community Service project. Today we Selected one remote Village called "Ramanapudi" which is near Gudivada town and also near to Pamarru.

Today we selected topic and we went to get permission from Sarpanch by explaining our project details by listening that the Village Sarpanch felt very happy and grant us permission to visit the Village.

Then in that week visited that Village and we decided that topic to solve in that Village

The topic that we selected is

Topic : "SAFETY AND SECURITY"

DAY-1

S No	Register Number	Name of the student	Present
1.	22NH1A0502	A. Ashraf	A. Ashraf
2.	22NH1A0505	A. shanmukha	A. Shanmukha
3.	22NH1A0518	B. Padma Sri	B. Padma Sri
4.	22NH1A0520	B. Sathwik	B. Sathwik
5.	22NH1A0525	ch. Santhi sri	ch. Santhi Sri
6.	22NH1A0550	K. Divya Sri	K. Divya Sri
7.	22NH1A0552	K. Neeraj Babu	K. Neeraj Babu
8.	22NH1A0556	K. Jayanthi	K. Jayanthi
9.	22NH1A0559	K. Abhishek	K. Abhishek
10.	22NH1A0562	K. John Rickets	K. John Rickets

DAY-2

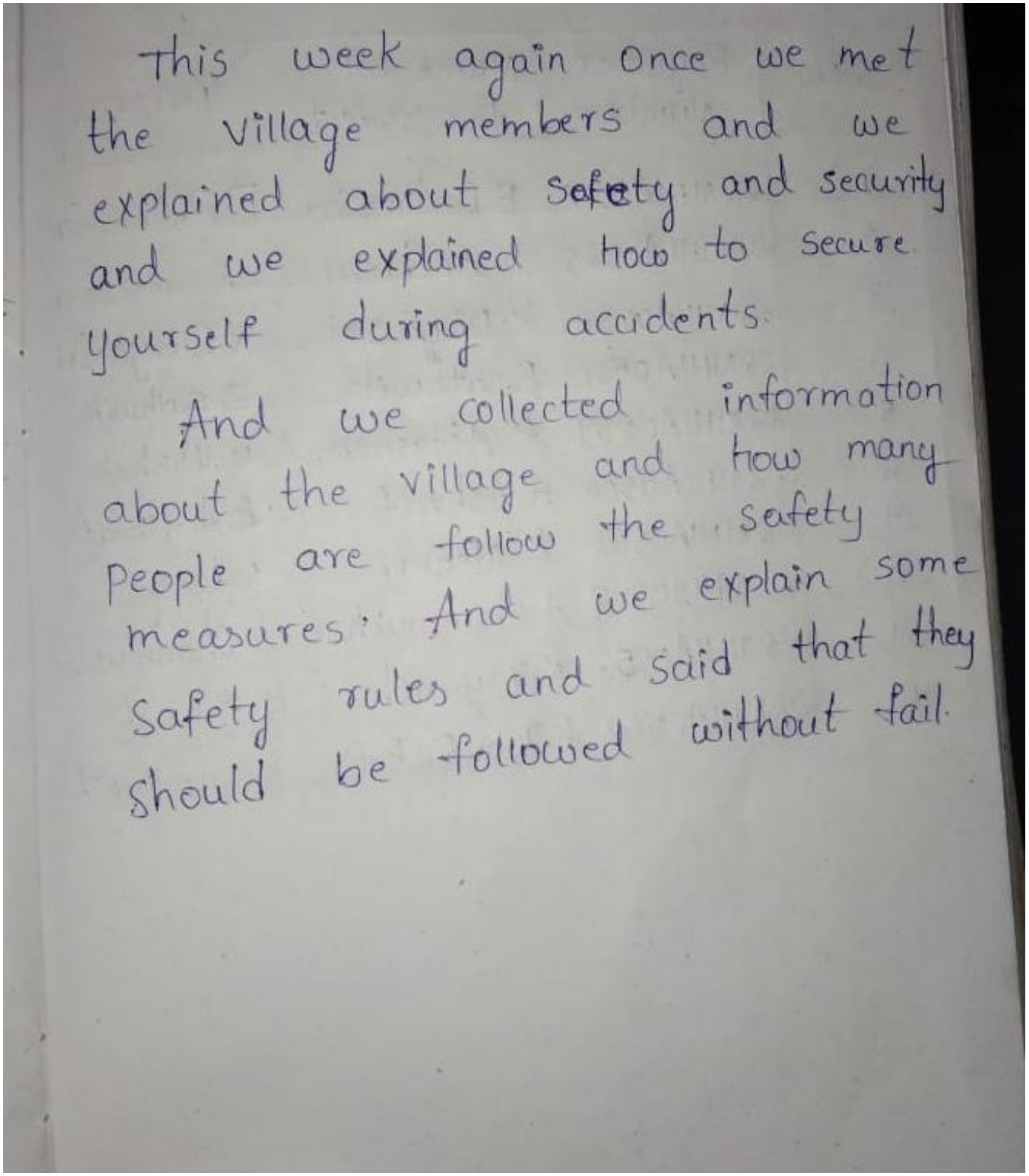
Today once we met the school students and now we can explained about safety and security and how to protect themselves from the health, traffic etc.

Now we collected information about the village of how many people are died in the road accidents and what measures should they are taken to protect themselves from road accidents and how they recovered from the accidents etc.

DAY-2

S.No	Register Number	Name of the student	Present
1.	22NHIA0502	A. Ashraf	A. Ashraf
2.	22NHIA0505	A. shanmukha	A. Shanmukha
3.	22NHIA0518	B. Padma Sri	B. Padma Sri
4.	22NHIA0520	B. Sathwik	B. Sathwik
5.	22NHIA0525	ch. Santhi Sri	ch. Santhi Sri
6.	22NHIA0550	K. Divya Sri	K. Divya Sri
7.	22NHIA0552	K. Neeraj Babu	K. Neeraj Babu
8.	22NHIA0556	K. Jayanthi	K. Jayanthi
9.	22NHIA0559	K. Abhishek	K. Abhishek
10.	22NHIA0562	K. John Rickets	K. John Rickets

DAY-3



This week again once we met the village members and we explained about safety and security and we explained how to secure yourself during accidents.

And we collected information about the village and how many people are follow the safety measures. And we explain some safety rules and said that they should be followed without fail.

DAY - 3

S.NO	Register Number	Name of the student	present
1	22NHIA0518	B.Padma Sri	B.Padma Sri
2	22NHIA0525	ch.santhi sri	ch.santhi sri
3	22NHIA0550	K.Divya sri	K.Divya Sri
4	22NHIA0520	B.Sathwik	B.Sathwik
5	22NHIA0559	K. Abhishek	K.Abhishek
6	22NHIA0502	A.Ashraf	A.Ashraf
7	22NHIA0552	K. Neeraj	K.Neeraj
8	22NHIA0505	A shanmukh	A Shanmukh
9	22NHIA0556	K.Jayanthi	K.Jayanthi
10	22NHIA0562	K.John Rickets	K.John Rickets

DAY -4

This week again once we met the people and we told them to follow safety Rules

And we go to school in that village and explain some good things about safety and security to that children.

DAY - 4

S.NO	Register Number	Name of the Student	Present
1	22NHIA0520	B. Sathwik	B. sathwik
2	22NHIA0518	B. Padma Sri	B Padma Sri
3	22NHIA0550	K. Divya Sri	K. Divya Sri
4	22NHIA0525	ch. santhi sri	ch. Santhi sri
5	22NHIA0556	K. Jayanthi	k. Jayanthi
6	22NHIA0562	K. John Rickets	K. John Rickets
7	22NHIA0559	k Abhishek	k Abhishek
8	22NHIA0505	A. shanmukh	A Shanmukh
9	22NHIA0502	A Ashraf	A. Ashraf
10	22NHIA0552	K. Neeraj	K. Neeraj

DAY - 5

The week again once we Met the some peoples and Now we explained about Safety and Security and how to prevent over village from Safety and security. Now we collected information about the village of how many people are follow the safety rules and security rules. And how they followed the Rules about Safety and Security etc.

DAY - 5

S.No	Register Number.	Name of the student.	Present.
①	22NHIA0505	A. shanmukha	A. Shanmukha.
②	22NHIA0518	B. Padmasri	B. Padmasri
③	22NHIA0502	A. Ashraf.	A. Ashraf
④	22NHIA0520	B. Sathwik	B. Sathwik
⑤	22NHIA0525	ch. Santhisri	ch. Santhisri
⑥	22NHIA0550	K. Divya sri	K. Divyasri
⑦	22NHIA0552	K. Neeraj Babu	K. Neerajbabu.
⑧	22NHIA0556	K. Jayanthi	K. Jayanthi
⑨	22NHIA0562	K. John Rickets.	K. John Rickets.
⑩	22NHIA0559	K. Abhishek.	K. Abhishek.

DAY - 6

We went to All Schools in that Area and said about the safety and security to the students and we can tell how to use masks and sanitizers and tell avoid some rules. We can give some information to girl's safety and Security. They all are listen and follow that rules. We felt very happy.

DAY - 6

S.No	Register Number	Name of the student	Present.
①	22NHIA0520	B. Sathwik.	B. Sathwik
②	22NHIA0559	K. Abhishek	K. Abhishek.
③	22NHIA0552	K. Neeraj babu	K. Neeraj babu.
④	22NHIA0502	A. Ashraf	A. Ashraf
⑤	22NHIA0505	A. Shanmukh	A. Shanmukh.
⑥	22NHIA0550	K. Divyasri	K. Divyasri
⑦	22NHIA0518	B. padmasri	B. Padmasri
⑧	22NHIA0525	ch. Santhi Sri	ch. Santhisri
⑨	22NHIA0556	K. Jayanthi	K. Jayanthi
⑩	22NHIA0562.	K. Jhon Rickets.	K. JhonRickets

DAY - 7

Today is the seventh day our community service projects. we are all meets the village member. explained about the safety and security, yourself during the health.

And we are all collects the information about the village. AND how many peoples are strictly followed by a instructions of a safety and security. TO discuss with the villagers about the road safety and security. All are they explained by a some good things in a villagers.

DAY- 7

S.NO	Register Number	Name of student	present
1	22NHIA0559	K. Abhishek	K. Abhishek
2	22NHIA0520	B. sathwik	B. Sathwik
3	22NHIA0502	A. Asharaf	A. Asharaf
4	22NHIA0552	K. Neeraj Babu	K. Neeraj Babu
5	22NHIA0505	A. shanmukha	A. shanmukha
6	22NHIA0561	K. Jhon Rickels	K. Jhon Rickels
7	22NHIA0525	ch. shanthi sri	Ch. Santhisri
8	22NHIA0550	K. Divyasri	K. Divya.
9	22NHIA0556	K. Jayanthi	K. Jayanthi
10	22NHIA0518	B. Padmasri	B Padmasri

Student Self-Evaluation for the Community Service Project

Student Name:

Registration No:

Period of CSP:

From:

To:

Date of Evaluation:

Date:

Signature of the Student

Evaluation by the Person in-charge in the Community / Habitation

Student Name:

Registration

No:

Period of CSP:

From:

To:

Date of Evaluation:

Name of the Person in-charge:

Address with mobile number:

Date: **Signature of the Supervisor**

CHAPTER-7

- REFERENCES
- CONCLUSION

- **REFERENCES :**

[1] CENELEC, IEC 61508: Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems. Parts 1-7. International Electro technical Commission, 2010. [

2] W. Young and N. G. Leveson, “An integrated approach to safety and security based on systems theory,” Commun. ACM, vol. 57, no. 2, 2014.

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[5] S. Kriaa, L. Piètre-Cambacédès, M. Bouissou, and Y. Halgand, “A survey of approaches combining safety and security for industrial control systems,” Reliability Engineering and System Safety, 2015.

[6] W. Young and N. Leveson, “Systems thinking for safety and security,” in Proceedings of the 29th Annual Computer Security Applications Conference, ser. ACSAC. ACM, 2013. 12

CONCLUSION:

All the villagers got minimum awareness about the Safety & Security. They had learned many new things, which are very helpful to them. They had learned basic things to take care of health and learned to use new and latest Security alerts to get protected from the Accidents.We have witnessed an increased need of safety and security co-analysis in the recent years. In this paper we have presented a systematic literature review exploring ways and trends in addressing safety and security co-analysis in system engineering. Since safety and security can negatively influence each other, analysing their interplay in an efficient manner means reducing the effort that needs to be invested in achieving a safe and secure system. The results of our review indicate that the most works focus on unified safety and security analysis that aims at exploring the influence of both security on safety and vice versa.


Thank You

A Project Report

On

COMMUNITY SERVICE PROJECT

Submitted in partial fulfilment of requirements to

JAWAHARLAL NEHRU TECHNOLOGY UNIVERSITY

KAKINADA *For the award of the degree*

Of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE & ENGINEERING

This is certify that the œcommunity service project report entitled awareness of Health and Hygiene Submitted

By

G.Tirumala konda(22NH1A0542)

D.Harshitha(22NH1A0536)

K.Stella(22NH1A0555)

A.Harshitha(22NH1A0507)

K.Ratnakumar(22NH1A0553V

V.SaiKrisveni(22NH1A05C2)

B.**Sushma(22NH1A0517)**

B.Subba Rao(22NH1A0519)

D.Keerthana(22NH1A0537)

I.Rupa(22NH1A0547)

CH. Asha latha(22NH1A0521)

Under the esteemed guidance of

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Assistant Professor

Department of Computer Science & Engineering

V.K.R, V.N.B & A.G.K COLLEGE OF ENGINEERING

(An ISO 9001:2015 certified Institution; Sponsored by General & Technical Education Society, Gudivada)

Affiliated to JNTU-KAKINADA & Approved by AICTE, New Delhi
Gudivada - 521301, Krishna District, Andhra Pradesh

2022-2025

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

V.K.R, V.N.B & A.G.K COLLEGE OF ENGINEERING

(Approved by AICTE-New Delhi, Recognized by Govt. of A.P & Affiliated to JNTUK KAKINADA)

GUDIVADA-521301, Krishna District, Andhra Pradesh.

CERTIFICATE

This is to certify that the entitled of **"COMMUNITY SERVICE PROJECT "** is the bonafide record of work carried out by

G.Tirumala konda(22NH1A0542)
B.**Sushma(22NH1A0517)**
D.Harshitha(22NH1A0536)
B.Subba Rao(22NH1A0519)
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V.SaiKrisveni(22NH1A05C2)

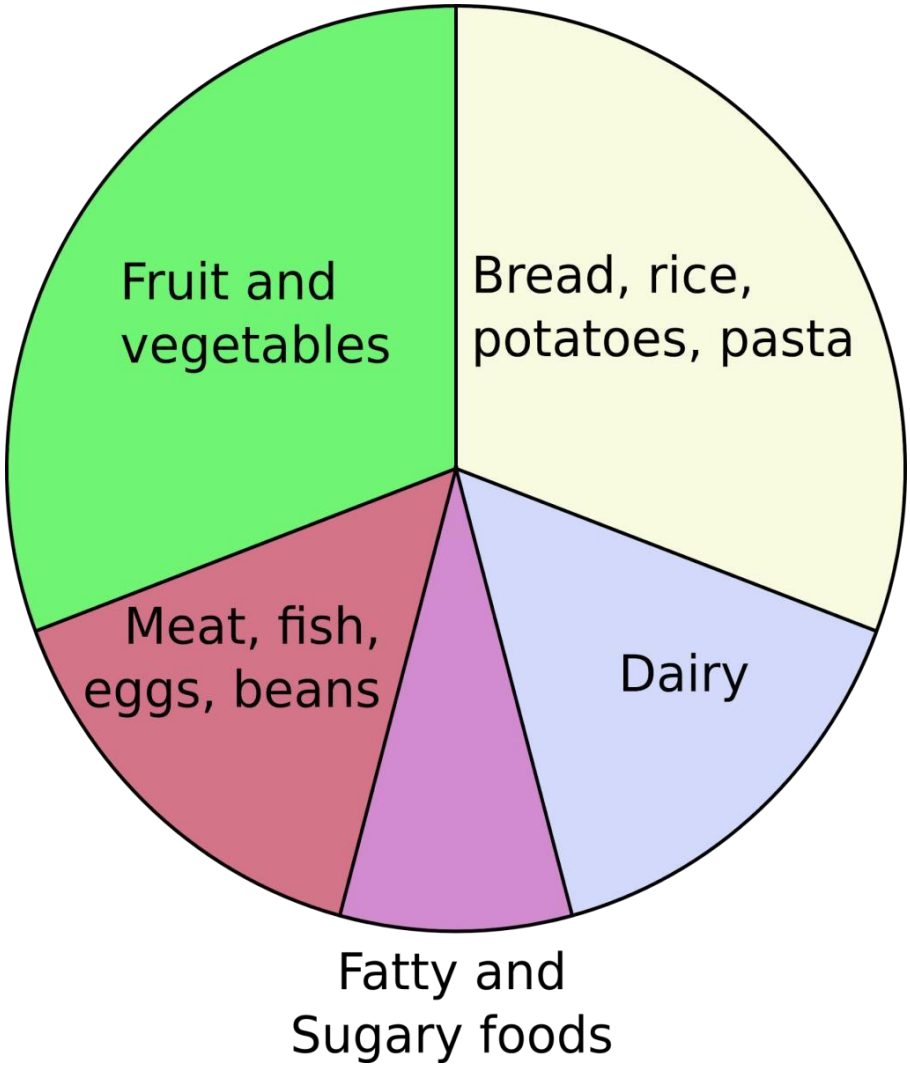
my guidance of supervision in partial fulfillment of the requirement forthe award of the of Bachelor of Technology in **Mechanical Engineering** of **JawaharlalNehru Technological University, K Technological University, Kakinada.**

Dr.V.J.Devaraaj (M.sc.,phil.MBA,phd)
HEAD OF THE DEPERTMENT
Dept. of Basic Science& Humanities

Smt.K.Rajamani.Msc(chemistry)
Assistant Professor

ACKNOWLEDGMENT

I would like to express my special thanks and gratitude to my project supervisor mrs.K.Rajamani madam Assistant professor of BS&H as well as over principal Professor Dr.S.H.V.Prasada Rao Garu, who gave me golden opportunity to do this wonderful project on “HEALTH AND HYGIENE” .



1. INTRODUCTION

HEALTH DEFINITION:-

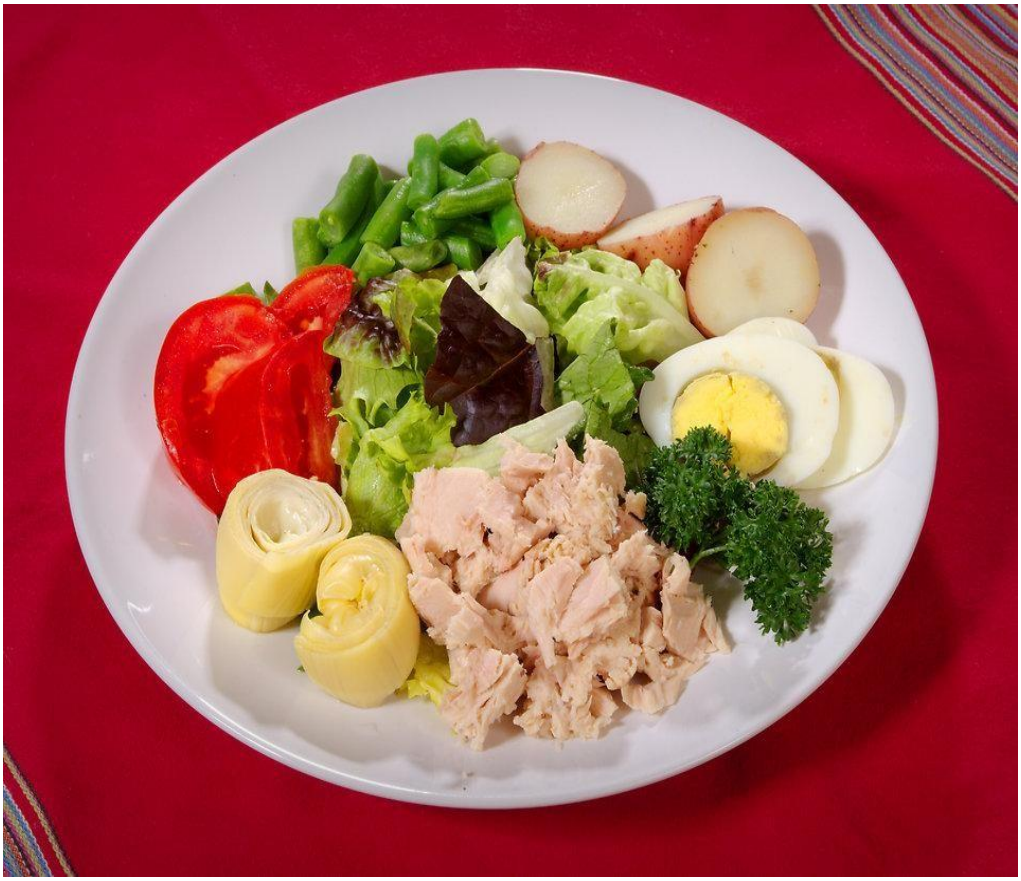
Health is defined as a state of complete physical, mental,

1. INTRODUCTION HEALTH DEFINITION:-

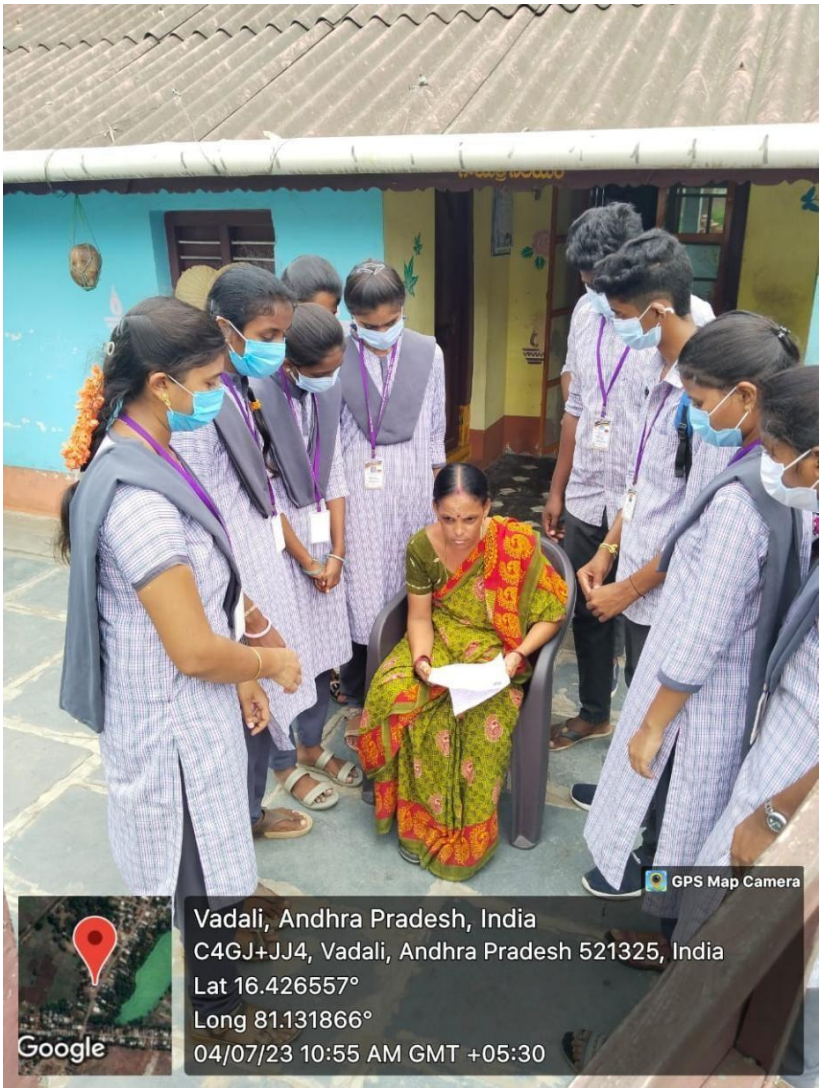
Health is defined as a state of complete physical, mental, and social – being and not merely an absence of disease or infirmity. Physical health and mental health are interred- related. Asand mind in a sound body is an old and appropriate saying for health. A healthy human being has generally the following Features:- *A clear skin. *Bright, clear eyes. *A body neither too fat nor too thin. * Fresh breath. *Good appetite. *Sound sleep. *Regular activity of bladder and bowels. *Coordinated body

movements. *Wash your hands properly. HYGIENE DEFINITION:- Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases. Medical hygiene therefore includes a specific set of practices associated with this preservation of health.

PUBLIC HYGIENE:- Sewage and chemical water should not be released in to the water bodies sewage should be chemically treated first before water borne diseases. IMMUNIZATION:- Immunization and vaccination can prevent infects disease. PERSONAL HYGIENE:- Take care of the skin ,keep your hands and nails clean, wash your hair regularly ,brush your teeth and gums after every meal, wash your eye daily with tap water ,nose must be cleaned at regular intervals ,never clean an ear with a sharp object ,do physical exercise to keep the body. Muscles active, take proper rest, sleep for 6-8hr daily, one should develop healthy habits. GOOD ENVIRONMENT:- *Maintain a good environment to prevent the spreading of disease due to the breeding of mosquitoes house files and microorganisms. *garbage should be kept in covered bins so that files do not breed on them. *do not allow water to stagnate outside your house and in your heighbarhood, all drains should also be covered. This will avoid breeding of mosquitoes. IMPORTENCE:*It improves personality. *It makes people admire at you. *Makes the environment clean. *It helps to improve hygiene in



*It enhances self –discipline. *you are the winner in the competitive work life



2. OBJECTIVES:-

*define environment health. *List the various types of ecosystem. *Describe how trees effect the urban environment. *Describe the relationship of the environment to human health. *Explain how the agriculture provides goods and services. OBJECTIVES OF HYGIENE:- Good personal hygiene involves keeping healthy all parts of the external body clean and healthy. It is important for maintaining both physical and mental health. In people with poor personal and hygiene health. In people provides with poor personal hygiene the body provides an ideal environment for germs to grow living it vulnerable to infection. *To know how food preparation areas are kept free of bacteria. *Good

personal hygiene. *Wearing protective clothing. *Using detergents to wash-up. *sterilisation using high temperatures for gamma rays. *correct disposal of waste.

3. PRINCIPALS:- HYGIENES PRINCIPLE:-

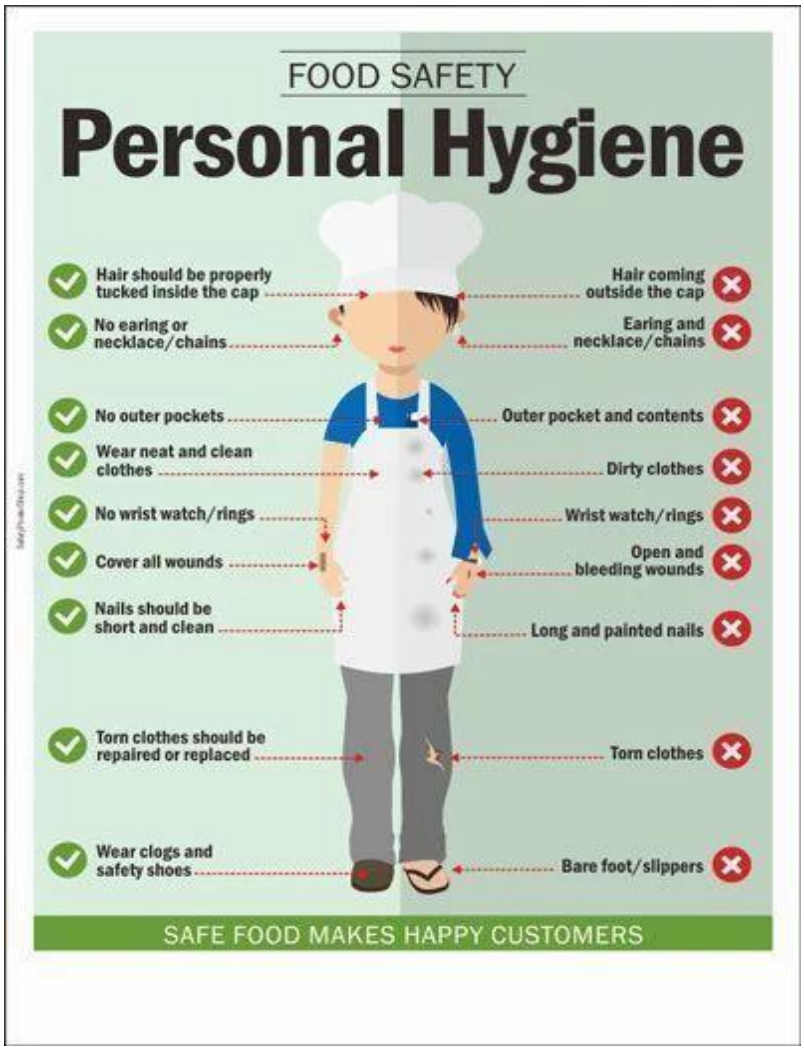
It states that each point of the wave front is the source of the secondary wavelength which spread out in all direction with the speed of a wave .so if we consider a point source , if will emit its wave front and nature of the wave front will be spherical one. As per the hygiene principles, all the points on the wave front are going to become a secondary source. So the wave front will in the forward direction. All the secondary sources emit wavelets tangent drawn to all the wavelets is the new position of the wavelets is the new position of the from waveform. This means that, suppose you are standing on the mountain and through a stone in water from a height. What do you observe? You see that the stone strikes are seen surrounding that point. Every point on the surface of water starts oscillating. These ripples are nothing but the wave front the wave fronts gradually spread in all the direction. So at every point, we have wave

coming

METHODOLOGY:-

The HEALTH AND HYGIENE and demographical status is very important for assessing the characteristics of village /word/ panchayathi. The developing the country on health and hygiene availability. The village health facilities survey conducted at Guraja, Eluru (DIS).The simple of 40 household families. in the village and calculated percentage their respective opinion of providing facilities of government . The following idea and project to know about statues of health and hygiene. This is a descriptive study with the following research questions. 1st To study health and hygiene analysis in Guraja 2 nd To study statues of requirements provided by government in this project, using simple random sampling technique to collect the information about Guraja health, Eluru dis. We design questionnaire based on provided by government of Andhra Pradesh. A collected sample 40 households one Panchayiti, Guraja ,Eluru (DIS) AREA AND POPULATION OF GURAJA The area of Eluru is 11,228 km and the population of Eluru is as of the 2022 census of India the city had a population of 466, 000,a2.42% increase from 2021. It is location 8 kilometres (5.0 miles) south of the Penna River. According to census 2011 Male population :15657 Female population: 17592 RESULTS AND DISCUSSION We collected 100 samples from Guraja village Eluru dis Simple random sampling and analysed. The following results based on socio, economic and demographical with other opining on basic requirement in Eluru district, Andhra Pradesh. 1. Is exercise important to health

HEALTH FREQUENCY PERCENTAGE GOOD 32 80% BAD 8 20% TOTAL 40 100% 2. Do you maintain personal hygiene? HEALTH FREQUENCY PERCENTAGE GOOD 22 60% BAD 18 40% TOTAL 40 100% HEALTH FREQUENCY PERCENTAGE 3. Isyour drinking wateris mineral water? YES 30 70% NO 10 30% TOTAL 40 100% IS TAP 4.Do we need to eat vitamin food ? HEALTH FREQUENCY PERCENTAGE YES 36 92% NO 4 8% TOTAL 40



100%

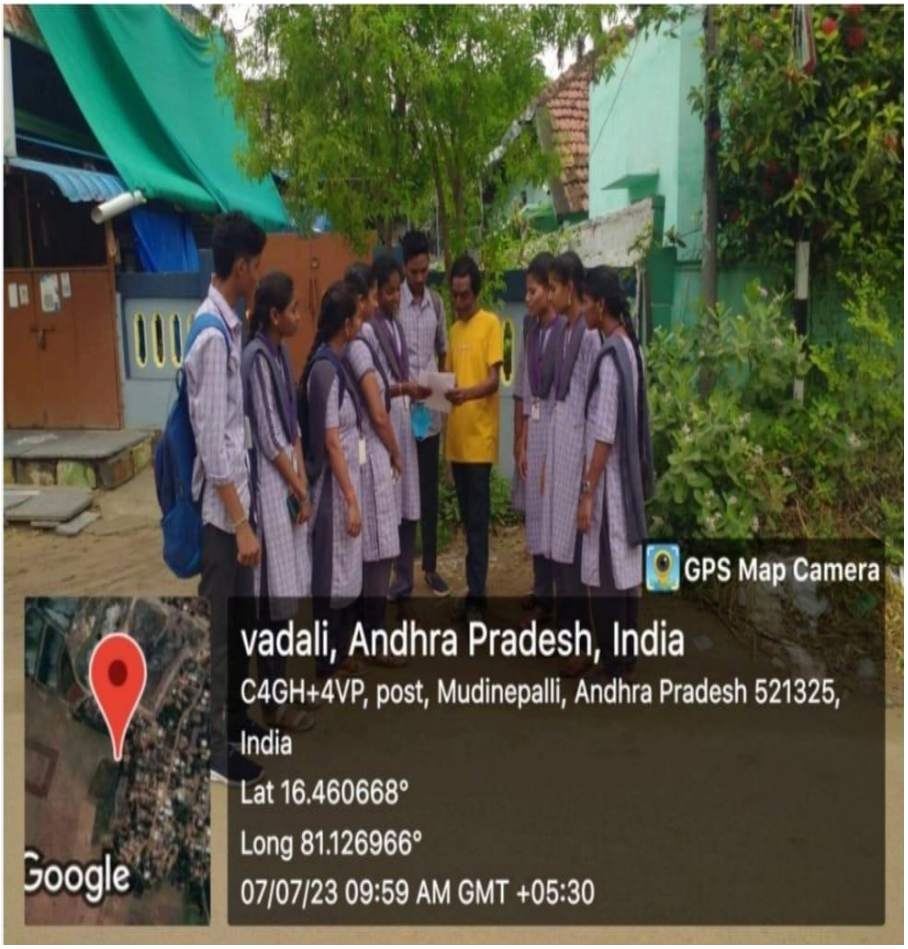
HEALTH FREQUENCY PERCENTAGE YES 33 85% NO 7 15% TOTAL 40 100%

5. Do you follow safety precaution during corona? AWARENESS As human beings, we want to live in a clean and hygienic environment. In fact, it is how we ascended in our journey to become civilized. Every time we wash our hands before meal or cover our mouth when coughing, we act as responsible humans phi have respect for other people's personal hygiene. Sadly enough, many among us don't share this awareness. A lot of them need to be reminded of the importance of cleanliness. Poverty and economic inequality are still a drag on humanity, even in 2018. A sizable percentage of human population mainly in developing nations still lives in abject poverty. Cleanliness is nothing but a luxury for these hapless people.

HOW TO INCREASE AWARENESS

It's easy to give up, but it's hard to pursue a goal and finally achieve it. Increasing awareness for cleanliness at societal level and at individual level is not easy. It requires time, patience, steadfastness, strategy and networking. On top of everything, the

epiphany that an effectively clean environment is one of the basic needs to live a healthy life. Eat healthy food Activity Log and weekly report Week Brief description of the daily activity Learning outcomes Person incharge Sign Day :-1 We did a survey on health issues in our local Government hospital How to identify a problem Day :-2 We did survey in local hospital what are the main health problems are raised How to identify a problem Day :-3 We did survey on health Problem Analysis issues in the local areas Day :-4 We meet some families And asking about the what are the health problems are faced Problem Analysis Day :-5 We did a survey on health issues



in local areas How to identify a problem Activity Log for the second week Week Brief description of the daily activity Learning outcomes Person incharge Sign Day :-1 To give awareness program in Government High school Data analysis Day :-2 We survey the school students what are the main health issues are faced by the students Found a solution to the problem Day :-3 We gave some advice to the student in health issues Solution for the problem Day :-4 We did a survey what are the health problems are faced by the students Data analysis Day :-5 We give a some health tips to the students Solution for the problem

ON SITE PHOTOS:


GPS Map Camera
Vadali, Andhra Pradesh, India
C4GJ+6PF, Vadali, Andhra Pradesh 521325, India
Lat 16.42533°
Long 81.132118°
08/07/23 10:05 AM GMT +05:30
Google


GPS Map Camera
Google
Vadali, Andhra Pradesh, India
C4GJ+6PF, Vadali, Andhra Pradesh 521325, India
Lat 16.425324°
Long 81.132117°
08/07/23 10:05 AM GMT +05:30

WEEKLY REPORT

Vadali is a Village in Mudinepalle Mandal in Krishna District of Andhra Pradesh State, India. It belongs to Andhra region . It is located 32 KM towards North from District head quarters Machilipatnam. 0 KM from Mudinepalli. 351 KM from State capital Hyderabad.

Vadali Pin code is 521325 and postal head office is Mudinepalli .

Sriharipuram (2 KM) , Mudinepalli (2 KM) , Kakaravada (2 KM) , Peyyeru (2 KM) , Dakaram (2 KM) are the nearby Villages to Vadali. Vadali is surrounded by Mandavalli Mandal towards North , Gudlavalleru Mandal towards South , Pedana Mandal towards South , Bantumilli Mandal towards East .

Gudivada , Pedana , Machilipatnam , Hanuman Junction are the near by Cities to Vadali.

Demographics of Vadali

Telugu is the Local Language here. Total population of Vadali is 4011 .Males are 2006 and Females are 2,005 living in 1087 Houses. Total area of Vadali is 463 hectares.

HOW TO REACH Vadali

By Road

Gudivada is the Nearest Town to Vadali. Gudivada is 20 km from Vadali. Road connectivity is there from Gudivada to Vadali.

Govt Health Centers near Vadali

1) Vadali , 1-162/8 , CHIGURUKOTA ROAD , NEAR MILK BOOTH

2) Mudinepalli , , gurajaroad , near school

3) Mudinepalli , 6-132/1 , GURAJA ROAD , BEHIND VETIONARY HOSPITAL

Village visit:

Now we selected the village named Vadalli which is near Gudivada town.

Description

Vadalli is a village in Eluru district of the Indian state of Andhra Pradesh. It is the mandal headquarters of Mudinepalli mandal in Gudivada Revenue division.

Area:
Population:
District:
weather:
Local time:
Lok sabha constituency:
Mandal:
Vidhan sabha constituency:

DAY - 1

Today is the first day of our community service project. We have selected one remote village called "Vadali" which is near Mudinepalli town and also near to Gudlavalleru.

Today we selected topic and we went to get permission from sarpanch by explaning our project details by listening that the village sarpanch felt very happy and grant us permission to visit the village.

Then in that week visisted that village and we decided that topic to solve in that village. The topic That we selectd is.

Topic :

S.No	Register Number	Name of the Student	Present
1.	22NHIA0542	G. Tirumala Konda	G. Konda
2.	22NHIA0521	ch. Ashalatha	Ashalatha.
3.	22NHIA05C2	V.S. Krishnaveni	V.S. krishnaveni
4.	22NHIA0547	I. Rupa	I Rup.
5.	22NHIA0507	A. Harshitha	A. Harshitha
6.	22NHIA0519	B Subbarao	B. Subbarao
7.	22NHIA0517	B. Sushma Vijaya Sri	Sushma
8	22NHIA0553	K. Ratnakumari	K. Ratnakuma.
9.	22NHIA0536	D. Harshitha	D Harshitha
10.	22NHIA0537	D. Keerthana	D. Keerthana
11.	22NHIA0555	K. M. Stella	K.M. Stella

DAY-2

Today once we met the school students and now we can explained about "HEALTH AND HYGIENE" and how to keep their body healty and hygiene etc.

Now we collected information about the village of how many people are died due to health issues. We gave them some advices to protect their health from diseases and keep hygiene their surroundings.

Register No	Name of the student	present
22NHIA0542	G.T. Konda	G.T. Konda
22NIHIA0517	B Sushma vijayasri	Sushma
22NHIA0519	B. Subbarao	Subbarao
22NHIA0547	I. Rupa	Rupa
22NHIA0507	A. Harshitha	Harshitha
22NHIA0537	D. Keerthana	Kerthana
22NHIA0521	Ch Ashalatha	Ashalatha
22NHIA0536	D. Harshitha	Harshitha
22NHIA0555	K. Mari Stella	Mari Stella
22NHIA0553	K. Ratna Kumar	Ratna Kumar
22NHIA0502	V. S. Krishnaveni	Krishnaveni

DAY-3

This week again once we met the village members and we explained about health and Hygiene. We explained how to secure yourself during any health issues.

And we collected information about the village and how many people are fallow the Health tips. And we explain some Healthy precautions for their good health maintainance. We said that they should befallowed without any fail.

We said that they shouldbeclean their surroundings regularly.

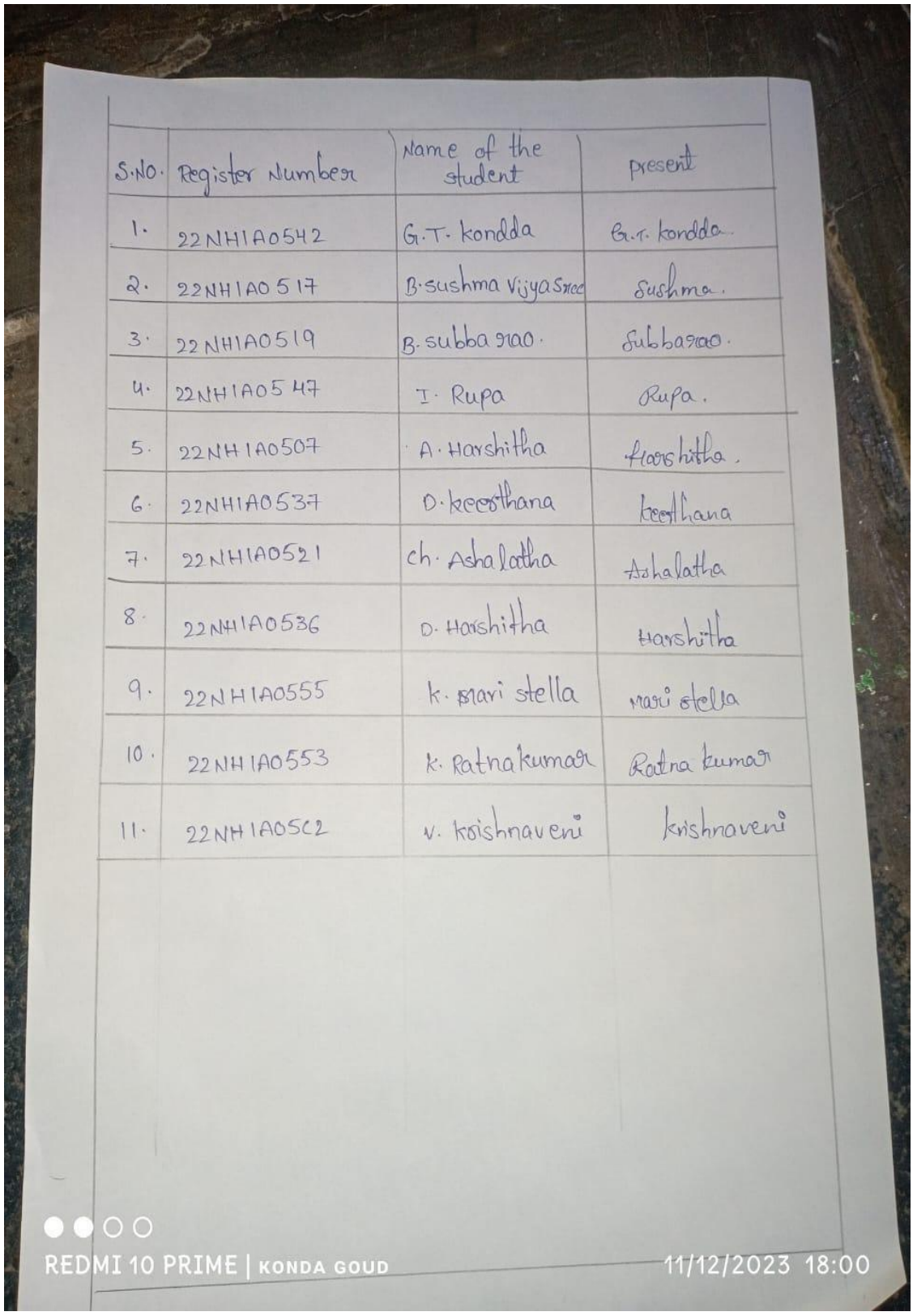
Register No	Name of the student	present
22NHIA0542	G.T. Konda	G.T. Konda
22NIHIA0517	B Sushma vijayasri	Sushma
22NHIA0519	B. Subbarao	Subbarao
22NHIA0547	I. Rupa	Rupa
22NHIA0507	A. Harshitha	Harshitha
22NHIA0537	D. Keerthana	Kerthana
22NHIA0521	Ch Ashalatha	Ashalatha
22NHIA0536	D. Harshitha	Harshitha
22NHIA0555	K. Mari Stella	Mari Stella
22NHIA0553	K. Ratna Kumar	Ratna Kumar
22NHIA0502	V. S. Krishnaveni	Krishnaveni

DAY-4

This week again once we meet the people and we told them to follow health and hygiene. To take the precautions health and hygienic.

And we go to school in that village and explain about some health and hygienics and good things for health. for childrens.

we said them to wear the mask, and sanitized their hands. and we said them to maintain the houses neat and clean.



S.NO.	Register Number	Name of the student	present
1.	22NH1A0542	G.T. kondda	G.T. kondda.
2.	22NH1A0517	B. sushma vijyasree	Sushma.
3.	22NH1A0519	B. subba rao.	Subbarao.
4.	22NH1A0547	I. Rupa	Rupa.
5.	22NH1A0507	A. Harshitha	Harshitha.
6.	22NH1A0537	D. keerthana	keerthana
7.	22NH1A0521	ch. Ashalatha	Ashalatha
8.	22NH1A0536	D. Harshitha	Harshitha
9.	22NH1A0555	k. mari stella	mari stella
10.	22NH1A0553	k. Ratnakumar	Ratna kumar
11.	22NH1A05C2	V. krishnaveni	krishnaveni

Day-5

S.NO	Register Number	Name of the student	present
1.	22NHIA0542	G. T. Konda	G T. Konda
2.	22NHIA0517	B. Sushma Vijayasree	Sushma
3.	22NHIA0521	Ch. Ashalatha	Ashalatha
4.	22NHIA0536	D. harshitha	Harshitha.
5.	22NHIA0519	B. Subbarao	B. Subbarao
6.	22NHIA0547	I. Rupa	I. Rupa
7.	22NHIA0507	A. Harshitha	A. Harshitha
8.	22NHIA0537	D. Keerthana	D. Keerthana
9.	22NHIA0553	K. Ratnakumar	K. Ratnakumar
10	22NHIA0555	K. Maristella	K. Maristella
11.	22NHIA05C2	V. Krishnaveni	Krishnaveni

DAY - 6

We went to all schools in that Area and said about the safty health and hygenic to Now the students and we can tell how to use masks and sanitizers and tell avoid some rules. We can give some information to girls safty & health & hygenic. They all are listen and follow that rules and we felt very happy and we told them Hand washing in crucial Grooming fingre nails. Main tain hand kerchief and keep the toys Germ Free. Take healthy food.

S.NO.	Register Number	Name of the student	present
1.	22NH1A0542	G.T. kondda	G.T. kondda
2.	22NH1A0517	B. sushma Vijayasree	Sushma.
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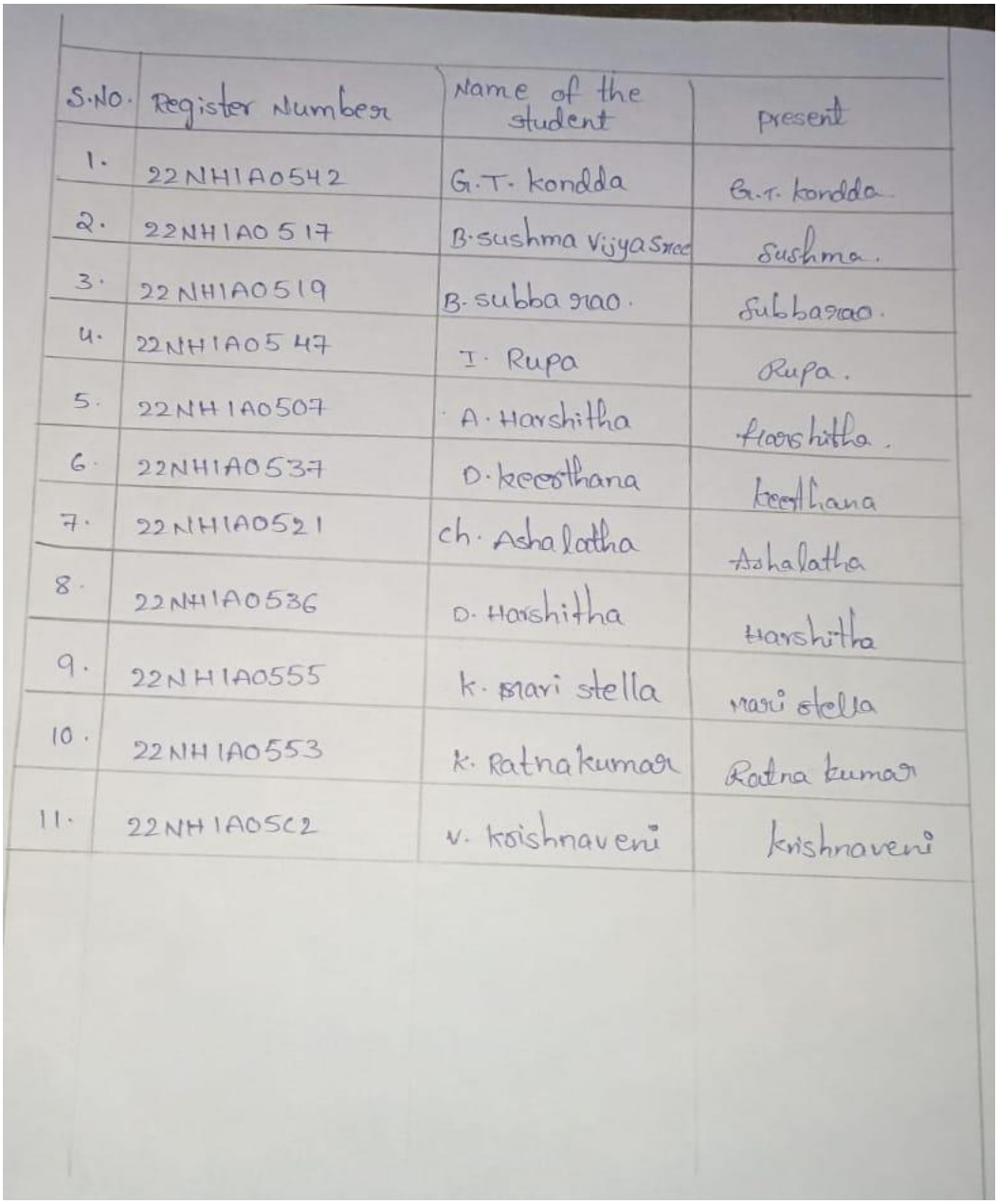
8.	22NH1A0536	D. Harshitha	Harshitha
9.	22NH1A0555	k. Mari stella	mari stella
10.	22NH1A0553	k. Ratnakumar	Ratna kumar
11.	22NH1A05C2	V. krishnaveni	krishnaveni

DAY - 7

Today is the seventh day our community service project. we are all meet the village member. Explained about the safety and security yourself during the health.

And we are all collect the information about the village. And how many peoples are strictly followed by instructions of Health and hygiene. To discuss with the villagers about the road safety of health and hygiene. All are they explained by a some good things to villagers.



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2.	22NH1A0517	B. sushma vijayasree	Sushma.
3.	22NH1A0519	B. subba rao.	Subbarao.
4.	22NH1A0547	I. Rupa	Rupa.
5.	22NH1A0507	A. Harshitha	Harshitha.
6.	22NH1A0537	D. keerthana	keerthana
7.	22NH1A0521	ch. Ashalatha	Ashalatha
8.	22NH1A0536	D. Harshitha	Harshitha
9.	22NH1A0555	k. mari stella	mari stella
10.	22NH1A0553	K. Ratnakumar	Ratna kumar
11.	22NH1A05C2	V. krishnaveni	krishnaveni

CONCLUSION:

In conclusion, prioritizing health and hygiene is paramount for overall well-being. Adopting consistent habits, such as proper handwashing, balanced nutrition, and regular exercise, not only safeguards against illness but also promotes a healthier and more fulfilling life. Remember, small everyday choices contribute significantly to long-term health outcomes.


Thank You

Water Facilities and Drinking Water Availability

A Community Service Project report

submitted in the partial fulfillment of the requirements for

the award of the degree of

Bachelor of Technology in
Computer Science and Engineering
by

D.Uday Sankar (22NH1A0534)
A.Jyotsna Sri (22NH1A0511)
A.Pavan Sai
(22NH1A0512)
A.Ayesha Siddiqa
(22NH1A0513)
B.Geetha Priya
(22NH1A0515)
Ch.Mohith
(22NH1A0524)
G.Ratna.Suteja
(22NH1A0543)
G.Navya
(22NH1A0545)
K.Pavan Teja
(22NH1A0560)
T. Abhilash
(22NH1A0B2)

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An ISO 9001:2015 Certified Institution
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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Certificate

This is to certify that the community service project entitled "**Water Facilities and Drinking Water Availability**" is being submitted byD.Uday Sankar (22NH1A0534), A.Jyotsna Sri (22NH1A0511), A.Pavan Sai(22NH1A0512)A.AyeshaSiddiqa,(22NH1A0513),B.GeethaPriya(22NH1A05), Ch.Mohith(22NH1A0524),G.RatnaSuteja,(22NH1A0543),G.Navya(22NH1A05), K.Pavan Teja(22NH1A0560), T. Abhilash(22NH1A0B2)
in partial fulfillment for the award of B. Tech in Computer Science & Engineering to the Jawaharlal Nehru Technological University Kakinada is a record of bonafide work carried out by him/her under our guidance.

The results embodied in this project report have not been submitted to any other University or Institute for the award of any degree or diploma.

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Declaration

The community service project work entitled "**Water Facilities and Drinking Water Availability**" is a record of bonafide work carried out by us, submitted in partial fulfillment for the award of B. Tech in Computer Science & Engineering to the Jawaharlal Nehru Technological University Kakinada. The results embodied in this project work have not been submitted to any other University or Institute for the award of any degree or diploma.

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ABSTRACT

Rural water supplies have traditionally been overshadowed by urban ones. That must now change, as the Sustainable Development Goals calls for water for all.

The objective of the paper is to assess the current access to and the perceived water quality in villages with various types of water supply. The survey was carried out during October 2022 in a village (Ananthavaram), Andhra Pradesh. Overall, 50 randomly selected households were interviewed. The results revealed that even though villagers were provided with tap water, significant numbers used alternative sources.

There were three reasons for this situation: residents' doubts regarding the tap water quality; use of other sources out of habit; and availability of cheaper or free sources. Another problem concerned the volume of water consumption, which dropped sharply with decreased quality or inconvenience of sources used by households.

Moreover, people gave a average estimate to the quality and reliability of water from wells, open sources and tankered water. The paper suggests that as well decentralization of water management as monitoring of both water supply and water use are essential measures.

There must be a tailor-made approach to each village for achieving the Sustainable Development Goal of providing rural area with safe water.

All this indicates that there is a greater need to improve the water supply situation including quantity, quality, accessibility and dependability or perenniality. An integrated water management approach has to be adopted so as to improve and build upon the existing structure that are highly decentralised and dispersed.

This would have important bearing on poverty reduction, environmental sustenance and sustainable economic development.

A Brief History of Water and Health from Ancient Civilizations to Modern Times

Early

Systems and Innovations

Modern humans (Homo sapiens) have dwelled on this earth for some 200 000 years, most of that time as hunter-gatherers and gradually growing in number. Approximately 50 000 years ago modern man began to inhabit every corner of the world and people were constantly on the move. Occasionally people were troubled by pathogens transmitted by contaminated water, but the general aversion for water that tasted revolting, stank and that looked disgusting must have developed quite early during the biological and cultural evolution of humankind. It has been postulated that the waterborne health risks of hunter-gatherers were small.

Archaeological and written sources concerning water and sanitation can, however, only be found from relatively recent times. Thus, in reconstructing the history of water and sanitation of this huntergatherer phase, we have to rely on the analogies of later societies. Modern anthropological studies and recorded mythologies of indigenous peoples play an important role in these analogies while observing primates and other more evolved mammals can also give us useful information.

Some 10 000 years ago, when people adopted an agrarian way of life, mankind established permanent settlements. This new type of livelihood spread everywhere and the population began to expand faster than ever before. Sedentary agricultural life made it possible to construct villages, cities and eventually states, all of which were highly dependent on water. This created a brand new relation between humans and water. Pathogens transmitted by contaminated water became a very serious health risk for the sedentary agriculturists. In this world guaranteeing pure water for people became a prerequisite for successful urbanization and state formation.

The earliest known permanent settlement, which can be classified as urban, is Jericho from 8000–7000 B.C., located near springs and other bodies of water. In Egypt there are traces of wells, and in Mesopotamia of stone rainwater channels, from 3000 B.C.. From the early Bronze Age city of Mohenjo-Daro, located in modern Pakistan, archaeologists have found hundreds of ancient wells, water pipes and toilets. The first evidence of the purposeful construction of the water supply, bathrooms, toilets and drainage in Europe comes from Bronze Age Minoan (and Mycenaean) Crete in the second millennium B.C.

The experience of humankind from the very beginning testifies to the importance and safety of groundwater as a water source, particularly springs and wells. The way in which water supply and sanitation was organized was essential for early agricultural societies. If wells and toilets were in good shape, health problems and environmental risks could be avoided.

The realization of the importance of pure water for people is evident already from the myths of ancient cultures. Religious cleanliness and water were important in various ancient cults. Ideas of the salubrity of water were connected to the general “scientific” level of the society. The first known Greek philosophical thinkers and medical writers also recognized the importance of water for the public health.

Ancient Greece and Rome

The first urbanization in Europe occurred during antiquity (500 B.C. – 500 A.D.) around the Mediterranean region. The share of urban population reached some 10–20 % in the centuries around the birth of Christ. The most urbanized areas were the Eastern Mediterranean,
Egypt, North Africa (modern Tunisia), the Apennine Peninsula (modern Italy), and the southern part of the Iberian Peninsula, most of which were areas of quite modest rainfall. In this period the archaeological and written sources become richer, and consequently improve our possibilities to study the relationship between water and health of people.

Alcmaeon of Croton (floruit ca. 470 B.C.) was the first Greek doctor to state that the quality of water may influence the health of people. (Aëtius, On the opinions of the philosophers V.30.1) Hippocratic treatise Airs, Waters, Places (around 400 B.C.) deals with the different sources, qualities and health effects of water in length. (Airs, Waters, Places. 1, 7, 8, 9) Various other Hippocratic treatises (mostly written around 400 B.C.) contain short comments on the influence of water on the health of people (Internal Affections. 6, 21, 23, 26, 34, 45, 47; Diseases I. 24; Epidemics II. 2.11; Epidemics VI. 4.8, 4.17; Aphorisms. 5.26; Humours. 12; Regimen IV or Dreams. 93). According to B.C. Vitruvius from the late first century, marshy areas must be avoided when the site of a city is chosen. (De Architectura. I.iv.1) Pliny the Elder in the first century A.D. had in his works a long section concerning the different opinions on what kind of water is the best. (Plinius NH, XXXI, xxi–xxiii). One of the most famous doctors during antiquity Galen (2nd century A.D.) summarises the preferable qualities of water (Galen. De Sanitate Tuenda. I.xi).

The quality of the water was examined by the senses: taste, smell, appearance and temperature. Also the health of the people and animals using a water source was considered (Vitruvius De Architectura. I,iv,9,10; VIII, iv,1,2). Throughout antiquity tasty or tasteless, cool, odourless and colourless water was considered the best, and stagnant, marshy water was avoided. These ideas were held until the end of antiquity as expressed by Palladius (5th century, Opus Agriculturae. I, 4) or Paulus Aeginata (7th century, Paulus Aeginata I.50). The ancient Greeks and Romans were also quite aware of the dangers of water coming from hills and mountains where mining was practised (Airs, Waters, Places. 7;Vitruvius. De Architectura. VIII,iii,5).

The ancient authors have thus made some comments about the influence of different kinds of water on the health of people, but had these comments any influence on the health of people is hard to infer. Because of the inadequacy of sources, it is practically impossible to evaluate the health of ancient populations and the role of water in it. It is, however, quite safe to conclude that despite the

impressive measures used to obtain pure potable water, urban centres had serious public health problems. The ancient Greek or Roman society did not have the interest or the means to deal adequately with matters of public health (Nutton 2005: 26).

The Greeks and Romans used different methods to improve the quality of the water if it did not satisfy their quality requirements. From written sources and archaeological excavations, we know that using settling tanks, sieves, filters and the boiling of water were methods used during antiquity. At least boiling of water, which was widely recommended by the medical authors during antiquity, would have diminished the biological risks of poor quality water. Although the boiling of water might have been feasible from a hygienic point of view, it was ecologically and economically not feasible in extensive use since firewood and other combustibles would sooner or later have become a scarce resource around the Mediterranean.

The poor level of waste management, including wastewater, most probably involved a major risk for public health during antiquity. For instance, toilet hygiene must have been quite poor. The abundance of water that was conducted to the bath could also be used to flush a public toilet. The Romans, however, lacked our toilet paper. They probably commonly used sponges or moss or something similar, which was moistened in the conduit in front of the seat and then used to rinse their bottoms. In public toilets facilities were common to all; they were cramped, without any privacy, and had no decent way to wash one's hands. The private toilets most likely usually lacked running water and they were commonly located near the kitchens. All this created an excellent opportunity for the spreading of intestinal pathogens.

Water-borne infections must have been among the main causes of death. Dysentery and different kinds of diarrhoeas must have played havoc with the populations. Although the ancient medical writers described different kinds of intestinal diseases, the retrospective diagnoses are difficult and the causative agents cannot be identified. Summer and early autumn, when water resources were meagre in the Mediterranean world, must have been a time when drinking

water was easily contaminated, and intestinal diseases were rife as presented in several passages in the Hippocratic writings (e.g. Airs, Waters, Places. 7; Aphorisms. III, 11, 21, 22; Internal Affections. 26, 45). The mortality of children, especially recently weaned, must also have been high (Prorrhetic II. 22). Furthermore, it should be kept in mind that the salubrity of the water supply must have differed markedly in accordance with the social status of people in the Roman towns. The rich had running water in their homes; the poor had to fetch their water from public fountains. The rich had their own baths and toilets, while the poor had to use public toilets and baths. All this must have lead to different health conditions and levels among rich and poor people.

A lot of the water in a Roman town was consumed in bath(s) connected to the aqueduct(s) (Figure 1). Ideally shining marble walls and limpid water were considered a feature of a bath in Rome, the cleanliness of which was watched over by aediles (Seneca. Ad Lucilium epistulae morales. 86). Baths were probably also beneficial for public health in towns where there was an abundance and rapid turnover of water. However, in towns where water was in short supply, cisterns had to be used and the turnover of water was slow, the role of baths was probably negative for public health.

Figure 1. Aqueduct in Agia Napa, Cyprus (Photo: P. Juuti).

Water supply and sanitation for military needs was a primary concern of the authorities of an imperial power like the Roman Empire needing a strong military machine. The Romans did know how to obtain adequate amounts of drinking water for their garrisons, cities and troops in the field and thus successfully planned their operations according to the availability of water. Army veterans were well accustomed to baths and to an ample water supply during their active service, and they may have been a quite important pressure group for building an aqueduct and bath in a town.

The contamination of water by lead has been a topic in the discussions concerning the health of people in Roman times. Roman authors expressed doubts concerning the use of lead pipes and recommended the use of ceramic pipes

(Vitruvius. De Architectura. 8.6.10–11; Palladius. Opus Agriculturae. 9.11; Columella. Rei Rusticae 1.5.2; Plinius. NH. XXXI.31.57). However, in practice it seems that although ceramic pipes were used, water was in many situations routinely distributed by lead pipes, as revealed by both written sources (Vitruvius De Architectura. 8.6.1, 4–6; Frontinus. 25.2, 27.3, 29.1, 30.1, 39–63, 105.5, 106.3, 115.3, 118.4, 129.4–6) and archaeological remains (Bruun 1991: 124–127; Hodge 1992: 307–315). Yet, there are two reasons to believe that exposure through water was quite minimal, as pointed out by A. Trevor Hodge (Hodge 1981 and 1992: 308). Firstly, as a consequence of the quality of the water, a calcium carbonate coating separated the lead and the water in most cases. Secondly, because of the constant flow, the contact time of water in the pipe was too short for contamination by lead.

The indirect public health effects of water might have been greater than the direct effects during antiquity. Agriculture depended on the proper amount of available water. Droughts and floods led to food shortages and famines. Food, people and pathogens moved most easily by water during antiquity. Maritime trade was especially vigorous around the Mediterranean in the period 200 B.C.– 200 A.D.. This meant that the Mediterranean world became more or less a common pool of infectious diseases (McNeill 1979, 78–140). Two important diseases caused by parasites were intimately connected with water and the ways water was managed during antiquity: namely malaria and schistosomiasis.

The breeding of mosquitoes depended on water and mosquitoes spread malaria, which was a serious and widespread health problem around the Mediterranean during antiquity. Malaria was well documented by Greek and Roman medical authors from the Hippocratic writings onwards. Among the cases in Epidemics I and III, a serious complication of chronic malaria, blackwater fever, has been identified by Mirko D. Grmek at least in one patient, Philiscus, but probably also in another, Pythion (Epidemics I, fourteen cases, case 1; Epidemics III, sixteen cases, case 3; Grmek 1989: 295–304). A fine description of malarial cachexia is to be found in Airs, Waters, Places, (Airs, Waters, Places, 7; Grmek 1989: 281).

Schistosomiasis (bilharzias) has been for millennia a scourge in Egypt. The parasite (blood-vessel inhabiting worms) has an intricate relationship between the human

host and a snail intermediate host. The type of agriculture (irrigation, flooding of the Nile) must have spread the disease. Although the evidence from ancient Egyptian medical papyri remains hard to interpret, there is strong paleopathological evidence of schistosomiasis in human remains from ancient Egypt.

Frontinus expressed clearly that a water system needed constant maintenance to function efficiently (Frontinus 116–123). For instance, calcium carbonate incrustation that formed inside the conduits needed constant removal, otherwise the flow of water would eventually stop (Hodge 1992: 227–232). In Italy aqueducts and baths seem to have been maintained even after other monumental buildings in the towns, with the exception of town walls and palaces, fell into disuse in late antiquity (Ward-Perkins 1984: 31, 128). In Antioch and other Near Eastern towns, at least part of the ancient water system was maintained into the Byzantine period and possibly up to the Era of Islam (Kennedy 1992). Although there were continuities from antiquity to the Middle Ages, the water supply was more limited and the Christian water patronage replaced the classical one: it was a move from luxuria to necessitas (Ward-Perkins 1984: 152).

The Second Urbanisation: Period of Slow Development

After the fall of the Roman Empire, water supply and sewage systems experienced fundamental changes in Europe. Medieval cities, castles and monasteries had their own wells, fountains or cisterns. Usually towns built a few modest latrines for the inhabitants, but these were mostly inadequate for the size of the population. The lack of proper sanitation increased the effects of epidemics in medieval towns in Europe.

Fundamental changes began to appear: science and knowledge were institutionalized for the first time when the development of modern universities started in the 13th century, and the agricultural world set out to industrialize from the 18th century onwards. Consequently, the growth of world population increased (Figure 2). All this profoundly affected

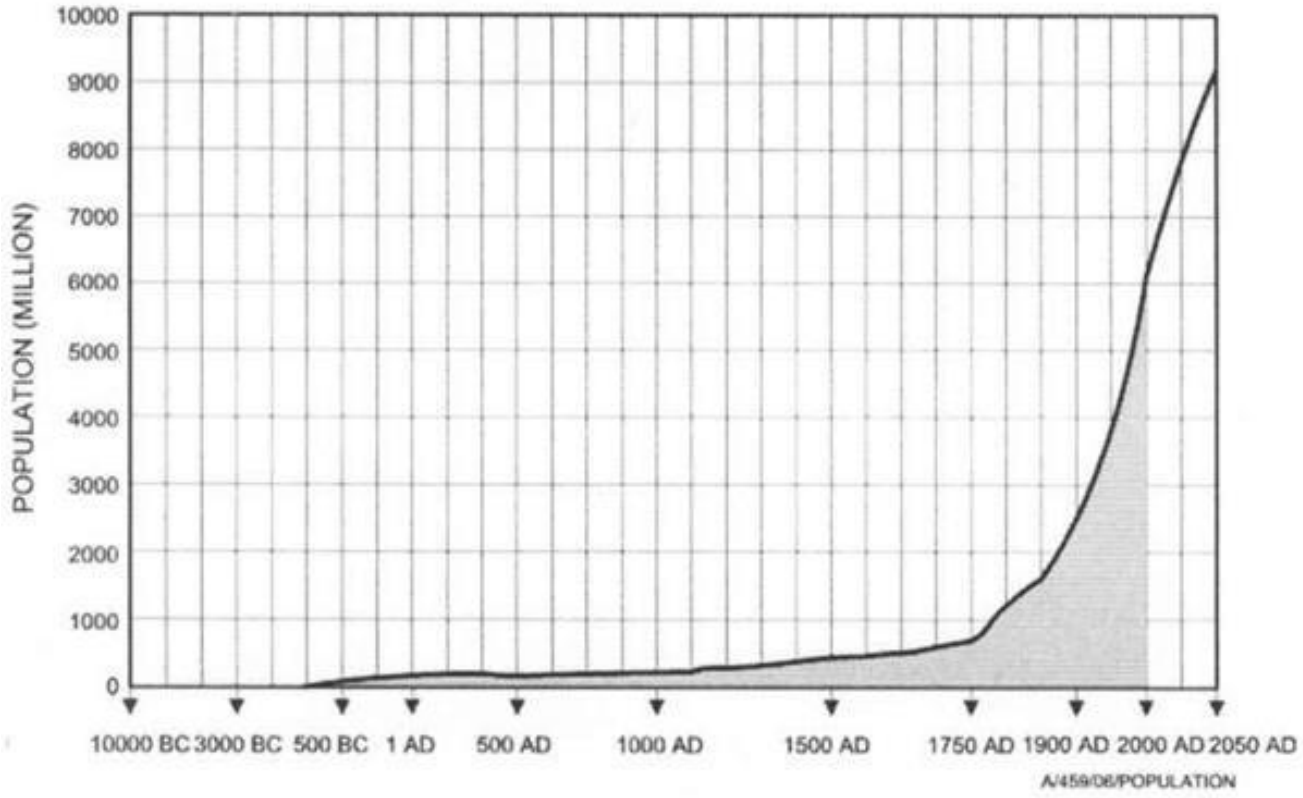

Fig 2. Estimated human population growth from 10 000 B.C. until year 2050 (Source: Juuti et al 2006: 13).

Along with the industrialization and urbanization of the Western world, enlightened people were fascinated with the idea of progress. Ever since the 18th century, science and reason were considered to be able to lead humankind towards an ever-happier future. This was the period when the first actual water closet was developed. By 1900, the water closet became a generally accepted cultural necessity in the Western world – the same way aqueducts had been in the Roman Empire. The water closet was seen as a victory for public health without any consideration for where the human excreta went through sewer pipes.

The start of industrialization and the related growth of cities created a situation where public health and environmental problems overwhelmed city governments to a greater degree than before, and novel technology was often seen as the solution. In the 19th century, Great Britain was seen as the forerunner of modern water supply and sanitation systems, but the innovations soon spread to Germany, other parts of Europe, USA and later also elsewhere.

Sanitation in towns around Europe was one of the great achievements of the 19th century. During the century the role of water in the transmission of several important diseases – cholera, dysentery, typhoid fever and diarrhoeas – was realized. The final proof came when the microbes causing these diseases were discovered. Especially cholera served as a justification for the sanitary movement around the world in the 19th century.

Sensory evaluation of water quality was complemented with chemical and microbiological examination. During the 19th century, filtering of the entire water supply of a town was introduced and the systematic chlorination of drinking water started in the early 20th century. The discovery of microbes and the introduction of efficient ways of treating large amounts of water paved the way to an era in which the public health problems caused by polluted water seemed to belong to history.

The Third Urbanisation: Modern Urban Infrastructure

The 1900s was a period of extensive population growth – the global population about quadrupled while the urban population increased 13fold (Figure 2). By 2000 A.D., in almost every country, over half of the population lived in urban areas. During the century industrial production increased 40-fold and the consumption of energy by a factor of tens. Water and sanitation services had a definite role in this rapid socio-economic change of the entire globe.

In the early 20th century the health problems associated with water pollution seemed to have been resolved in the industrialized countries when chlorination and other water treatment techniques were developed and widely taken into use. Microbiological problems related to water were largely considered a problem of

the developing world. However, in the late 20th century the biological hazards transmitted by water emerged again in the post-modern Western world. Anxiety about chemical and radioactive environmental hazards and their impacts on human health mounted in the 1960s. The overall amount of known biological and chemical health hazards transmitted by water increased manifold during the last half of the 20th century.

In today's world around 10 000 people die every day due to diseases like dysentery, cholera, and various diarrhoeal diseases, caused by a lack of safe water and adequate sanitation. Yet, since most of those who die are children and old people, whose death is considered "natural", or people who are more or less marginalized in their societies (e.g. refugees, the poor) or living outside areas that are important for the global economy, mortality due to these waterborne diseases is too often considered unavoidable.

The Fourth Urbanisation: Future Challenges

In the historical context, the growth of urban centres has been a continuous and even an escalating trend. Many of these centres are today located in developing economies, while the ensuing problems are concentrated on the poorest people – as always. The most severe constraints include poor living conditions, a lack of democracy, poor hygiene, illiteracy, corruption and a lack of proper water and sanitation services. Especially women and children suffer from these constraints.

Today there is a global shortage of potable water. When making fundamental decisions concerning water supply and sewerage, it is also necessary to be ready to make big investments. Services that are now at a high operational level were not achieved easily and without massive inputs and efforts. This is something to keep in mind when assessing future options and considering required strategies.

The level of water supply and sanitation in a society is not necessarily bound with time and place as much as the capability of that society to take responsibility for developing the living environment of its citizens and proper policies. In some

cases, the situation was even better earlier than nowadays. Decisions have been made concerning water and sanitation systems – e.g. the universal acceptance of the water closet as a cultural necessity – that through path dependence have limited future options. There have also been situations where the choice of a technology has been regarded as problematic from the first beginning but has been chosen anyway. For instance, lead pipes were considered hazardous for health already in antiquity but continued to be used in house connections until recently.

Water supply and sanitation systems have always required continuous maintenance and adequate rehabilitation. This was already evident with the Roman aqueducts: calcium carbonate incrustation forming within the conduits needed to be removed constantly or it would have stopped the flow of water. The same is true for modern systems: they must be maintained to function properly.

Major Findings and their Relevance

The 30 cases from all the continents covering various historical phases indicate that the level of water supply and sanitation is not necessarily bound with time and place as much as the capability of society to take responsibility for developing the living environment of its citizens.

Below we will shortly discuss some of the key findings according to the horizontal themes of the book: population growth, health, water consumption, technological choices and water governance.

Population density & poverty

Throughout the history major problems seem to be concentrated largely on the same people - the poor, if not the poorest of the poor. They suffer from poor sanitation, lack of good water, ensuing health problems, poor education and often lack of good governance and basic democracy. Women, children – and especially girls – are often the ones who fetch the water from distant sources of water. This daily task prevents the latter going to school, learning to read etc. Eventually they

become adults who might not be able to act as an active citizen and all in all have effect on their own lives let alone the society as a whole.

From the point of view of our and the environment's wellbeing, it is essential that water is good and safe – regardless whether it is from piped systems or point sources like wells. The same is the case with sanitation — it is a question of being connected either to the sewer or using proper on-site sanitation solutions. It is just vitally important to operate and maintain the systems properly. A well and an eco-toilet, especially in areas with scattered settlements, will also provide in future durable and ecological solutions. Investing in water supply and sewerage and thus also in the environment is always worthwhile. Studying wells and toilets needs more resources, so that we could find the best solutions and paths of action for different conditions – there is no such thing as cookie-cutter solution for systems which have such direct interaction with the environment.

For economic but also for several other reasons, it is not feasible to have waterborne sewerage everywhere while obviously they are needed in densely-populated areas at the moment. In dispersed rural areas at least such alternative on-site systems can be considered. These alternative systems seem particularly be subject to local conditions.

Health

Public health has always been a major factor influencing the ways how water supply has been solved by societies. The source of water supply was chosen according to its salubrity: clear, odourless water e.g. from springs or wells was preferred. Already from antiquity it was known that certain kinds of water caused health problems. Stagnant and marshy waters were avoided throughout times. New waterborne health hazards were recognized from the 19th century onwards: microbes, chemical pollutants.

We know that people have used their senses to perceive the quality of drinking-water at least from antiquity and most probably long time before. Related to the technological development new methods to study the quality of water were introduced from the 19th century onwards including chemical and microbiological

studies. Concerning these two factors in historical perspectives we can see a clear continuity and also strong changes that both are depending on the scientific and technological level of the society.

Already in antiquity various methods like sieves, filtration and boiling were used to improve the quality of drinking-water. However, it was only in the 19th century that filtration of drinking water in urban centres became a common practise. Disinfection of drinking-water by different methods was introduced in the early 20th century. By proper use of the water treatment technologies the salubrity of drinking-water could be guaranteed to ever growing population.

The importance of good quality drinking-water for urban population was realized already in antiquity. Yet, the importance of proper sanitation for the health of town people was not discovered until the 19th century. The building of “modern” urban sewerage systems started in Britain and rapidly spread all over the globe.

Water use

Water used in large quantities has been deemed as an essential part of civilized way of life in different periods: Roman baths needed a lot of water as does the current way of life with water closets, showers and jacuzzis. Particularly high rates of water use are noticed when it is not properly charged for. The evidence indicates that as soon as water but also wastewater are charged according to the real costs wastage diminishes remarkably. Although at the global scale the great majority of water is used for irrigation, the highest priority of water use purposes is for the community water supply.

Throughout history there have been different solutions to guarantee an ample amount of water for human settlements. Indigenous people have been very ingenious in drawing their water. They have considered water a very crucial and often a sacred element. In the long run the availability of abundant or adequate amount of water has been one of the crucial factors for the development of a society – cities and communities.

Technological choices

In some cases the technological choices may have been erroneous or less successful. Example of these are lead pipes, used in the antique and continued to be used in house connections until recently. Ultimately water supply and sanitation systems need continuous maintenance and adequate rehabilitation. This was already evident in the Roman aqueducts: calcium carbonate incrustation formed inside the conduits needed constant removal, while otherwise stopping the water flow. The same is true for the modern systems, the maintenance of them must be taken care of otherwise they do not function properly. The bigger – if not the biggest – problem is related to the need of continuous replacement and rehabilitation.

One long-term debatable issue has been, and still is, whether to use ground or surface water as raw water for community purposes, or more generally, what sources to use. For small systems often ground water was available but for bigger systems surface water was needed. This is connected to the current question how far is it economically feasible to expand such systems. Once the systems expand other criteria such as vulnerability are also to be considered.

Governance

World Water Development Report 2003, produced practically by all the UN family and thus almost all the sectors of human life and society, pointed out how the water crisis is largely a crisis of governance. The report pointed further “many of the leading obstacles to sound and sustainable water management: sector fragmentation, poverty, corruption, stagnated budgets, declining levels of development assistance and investment in the water sector, inadequate institutions and limited stakeholder participation”

The findings of our book refer to the need of good governance – as pointed recently by several international water policy documents. are largely along the same lines. People should be allowed and encouraged to use their own experiences and abilities to solve their problems. Such empowerment will most probably have more sustainable results than any mere top-down approaches. In overall god and effective water governance We obviously need to balance the centralised requirements such as legislation and decentralised requirements of

water services management at local levels of cities, communities and households. It is The findings of this book also imply the important to involve all the stakeholders in decision-making in their proper roles as well as participation of users and citizens – the ultimate users, beneficiaries and payers of these services.

Interestingly enough, some of the basic principles of sustainable and viable water governance and services were written more than 2000 years ago. Using these principles many of the present problems could be avoided and solved. In spite of this mankind does not use largely these principles due to lack of proper governance but also resistant attitudes among people. It seems to be difficult, if not impossible, to resist advantages and profits gained on short-run by some, instead of thinking of long-term benefits potentially achieved by far many.

It seems to be very challenging for mankind to adopt systems and issues of fundamental importance – such as water supply and sanitation. Unfortunately it is psychologically much easier to promote bottled water or handing-over water services to international private operators – both interested mainly on short-term profits. Indeed, any sustainable water services will require long-term actions and planning, which the current western culture largely ignores. The time frame and related thinking seem to become shorter and shorter.

Yet, change itself should not be an end in itself. Decisions made in antiquity and in the late 19th century had a minimum frame of a century and often even more. In the foreseeable future such time frame should also be used if any sustainable results are to be achieved.

More than just a commodity, water is an economic and social good. This places responsibility for its management and oversight in the public sphere. Balancing of water use priorities, water quantity and water quality is of high importance for the futures. While water supply will continue to have the highest priority water quality issues will be relatively even more important than quantity. At the same time it is more and more important to use water wisely and avoid wastage of this important natural resource. In global context water pollution control and sanitation are probably the biggest challenges – removing substantially

wastewater loadings from communities, industries and agriculture in many parts of the world.

Finally, the historical cases reveal that there is probably wider diversity of options and development paths – whole sets of institutional arrangements – than believed or recognised so far. The role of capital cities has not been as dominant as earlier assumed. In many cases remarkable networking of professionals has taken place in the early phases.

There is a huge variety of development paths and solutions in urban water supply and sanitation. Local conditions, traditions and people have to be in the core of decision making when future solutions are considered. However, since water sources for every city have their own unique location and quality, and each city has its own unique physical, social and administrative morphology, solutions of one city may not work for another.

In the long historical perspective it is evident that regardless of the political system good local solutions can be found based on local conditions, needs and traditions. Although water – and particularly water services – are largely dependent on local conditions. Yet, it is useful to make comparative studies between cities and communities in various regions and cultures, and identify possibly applicable and replicable principles and practices.

SURVEY QUESTIONNAIRE

The following survey questionnaire was designed with an aim of generating data related to the Drinking Water and Water Availability Services. The respondents were asked to fill the questionnaire. Questions were framed inn logical order and were of different types. Few are a short answer where as few are rating scales. This diversified approach while framing the Survey questionnaire helped us in collecting the data in an easier format without much chaos. It must be noted that the responses are entirely based on the perception of the respondents.

Name of Investigator: _____ Starting Time: _____

Date: _____ Ending Time: _____

Investigator Introduction:

Hello, my name is _____, and I work for _____, a Social Science Survey Agency that is collecting information on drinking water services in _____. May I speak to an adult member of your household? (Modify the introduction to sound as natural as possible.) Instruction to investigator: please use pencils and circle the code where applicable and write the answers in legible handwriting in the spaces provided for responses.

Section I. Demographic Questions

1 What is your name? _____ 2 Gender of respondent

1- Male

2- Female

3 What is your age? _____years

4 Location/ Address: _____ 5

Type of family 1-Nuclear

2-Joint/ extended

6 a. Number of adult males in the household _____

b. Number of adult females in the household _____

c. Number of male children _____

d. Number of female children _____

7 How many members in the household are employed?

_____

8 What is the monthly household income?

1- 10000 Rs
2- 1001-2500 Rs
3- 2501-5000
4- 5001-10000 Rs 5- > 10000 Rs

Section II. Drinking Water General

9 Which of the following sources of drinking available in your neighborhood? (Multiple responses are possible)

1- Bore well/ hand pump
2- Public tap
3- Community well
4- Household water supply (piped)
6- Other

10 Which of the following sources of drinking water does your household use? (Multiple responses are possible)

1- Bore well/ hand pump
2- Public tap
3- Open well
4- Household water supply (piped)
5- Other

11 What is your main source of water?

1- Bore well/ hand pump (skip to q. 12)
2- Public tap (skip to q.18)
3- Open well (skip to q.28)

Single response

4- Household water supply/ piped (skip to q. 32)

5- Other specify ---------- (skip to Q36)

Bore well/ hand pump

12 How far (in meters) is the bore well/ hand _____ pump that use?

13 How long (in minutes) does it take to fetch _____ water and return home?

14 Who fetches water most often ? 1- Adult male

2- Adult female

3- Male child

4- Female child

15 Has the bore well / hand pump broken down in the past one year? 1- Yes

2- No (skip to q. 36) 16 How frequently has the bore well/ hand pump broken down during the past one year? 1. Once a week

2. Once a fortnight

3. a quarter

4. in six months

5. a year 17 Is the bore well/ hand pump fixed promptly when it breaks down? Yes 2- No

GO TO QUESTION 3

Public tap

18 How far (in meters) is the public tap that _____ you use?

	_____
19 How long (in minutes) does it take to fetch water and return home?	1- Adult male 2- Adult female 3- Male child 4- Female child
20 Who fetches water most often?	1- More than once a day 2- Once a day 3- Once in two days 4- Once in three days 5- Once a week 7- Other
21 What is the frequency of water supply?	1- Yes (skip to q. 24) 2- No
22 Is this frequency sufficient for your needs?	1- More than once a day 2- Once a day 3- Other
23 How often would you like to get water?	_____
24 On the days that you get water, how many hours do you usually get water for? 25 Has the public tap broken down in the past one year?	1- Yes 2- No (skip to q. 36)
26 How frequently has it broken down?	1- Once a week 2- Once a fortnight 3- Once a quarter 4- Once in six months

5- Once a year

27 Is the public tap fixed promptly when it breaks down?

1- Yes

2- No

GO TO QUESTION 36

Open well

28 How far (in meters) is the open well from which you get water?

_____

29 How long (in minutes) does it take to fetch water and return home?

_____

30 Who fetches water most often?

1- Adult male

2- Adult female

3- Male child

4- Female child

31 What is the frequency of cleaning the well?

1- Once in a quarter

2- Once in six months

3- Once a year

4- Not cleaned in the last year

GO TO QUESTION 36

Household water supply (piped)

32.What is the frequency of water supply?

1- 24 hour supply (skip to q. 36)

2- More than once a day

3- Once a day

4- Once in two days

1-

33 Is this frequency sufficient for your needs? Yes (skip to q. 36)

2- No

34 How often would you like to get water?

1- More than once a day

2- Once a day

3- Other

35 On the days that you get water, how many hours do you usually get water for? _____

CONTINUE TO QUESTION 36

<u>Common Questions</u>

36 Is the quantity of water that you receive (from your main source of water) adequate?

1- Yes

2- No

37 Is water available (from your main source) throughout the year?

1- Yes (skip to q. 39)

2- No

38 Which months do you face scarcity? Multiple

1- January

2- February

3- March

4- April

5- May

6- June

7- July

8- August

9- September

10- October

11- November

12- December

1-

39 Generally, how does the water smell? No smell 2- Foul smell

40 Generally, does the water have a taste?
1- Yes
2- No (tasteless)

41 Generally, what does the water look like?
1- Clear
2- Cloudy/ dirty

42 Do you pay for water?
1- Yes
2- No (skip to q. 45)

43 How much do you pay a month? _____

44 Are the bills that you receive accurate?
1- Yes
2- No

45 Have you made a complaint related to your drinking water service in the past one year?
1- Yes
2- No (skip to q. 48)

46 To whom did you complain? _____

47 What was the result of the complaint?
1- Prompt action taken
2- Delayed action taken
3- No action taken

48 Overall, are you satisfied with your drinking water service?
1- Satisfied
2- Dissatisfied (skip to q. 50)

49 What is the extent of your satisfaction?
1- Complete (skip to q. 51)
2- Partial (skip to q.

5) 50 What are the reasons for your dissatisfaction?

(list up to three)

51 Have you paid a bribe for any service related to drinking water in the last one-year?
1- Yes
2- No (interview complete)

1-

52 For what purpose have you most recently paid a bribe?	To get a connection/ to access water supply 2- To finish repair work 3- Oth er 53 How much did you pay?
54 Was the bribe demanded (or did you pay on your own)	1- Demanded 2- Paid on my own
55 Did the work get done after paying the bribe?	1- Yes 2- No (Interview Complete)

COMMUNITY AWARENESS PROGRAM

Based on survey results, an awareness program was carried out to explain people about Awareness on Water Scarcity. This program carried out in **Ananthavaram** village. The following aspects were covered in the awareness program:

- Awareness on Water Scarcity
- Wastewater and Water Treatment
- Pollution Prevention and Monitoring
- Water Resilience

POSSIBLE SOLUTIONS

Rainwater harvesting :-

Rainwater harvesting is the collection and storage of rain, rather than allowing it to run off. Rainwater is collected from a roof-like surface and redirected to a tank, cistern, deep pit, aquifer, or a reservoir with percolation, so that it seeps down and restores the ground water.

Stormwater harvesting :-

Stormwater harvesting or Stormwater reuse is the collection, accumulation, treatment or purification, and storage of stormwater for its eventual reuse.

Reclaimed Wastewater :-

Water reclamation is the process of converting municipal wastewater or industrial wastewater into water that can be reused for a variety of purposes. Types of reuse include: urban reuse, agricultural reuse, environmental reuse, industrial reuse, planned potable reuse, de facto wastewater reuse.

SURVEY PICTURES


GPS Map Camera
Jujjavaram, Andhra Pradesh, India
Vijayawada Rd, Jujjavaram, Andhra Pradesh 521158, India
Lat 16.303972°
Long 80.996729°
11/07/23 09:19 AM GMT +05:30
Google


GPS Map Camera
Jujjavaram, Andhra Pradesh, India
Kavatavaram - Pamarru Rd, Jujjavaram, Kapavaram, Andhra Pradesh 521158, India
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GPS Map Camera
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Lat 16.304284°
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8X2X+R87, Jujjavaram, Andhra Pradesh 521158, India
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CONCLUSION

As we have observed that the main water source for Ananthavaram village is based on the underground water resources. Village panchayat has dug a borewell for the supply of supply of household uses and the main drinking water supply is done by the private water plant which is located in the village. And very few families in the village depend upon the Krishna river water which is supplied by the State government of Andhra Pradesh. So, the there would be a chance for water scarcity in the Ananthavaram village. To over come that problem they need to take steps to conserve the water resources. And also they need to find an alternate source of water.

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General Solutions For water Availability :

https://www.energy.gov/eere/femp/best-management-practice-14alternative-water-sources

A Project ReportOn

COMMUNITY SERVICE PROJECT

Submitted in partial fulfillment of requirements to

JAWAHARLAL NEHRU TECHNOLOGY UNIVERSITY KAKINADA

For the award of the degree of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE & ENGINEERING

Submitted By

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(An ISO 9001:2015 certified Institution; Sponsored by General & Technical Education Society, Gudivada)

Affiliated to JNTU-KAKINADA & Approved by AICTE, New Delhi Gudivada- 521301, Krishna District, Andhra Pradesh

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GUDIVADA-521301, Krishna District, Andhra Pradesh.

CERTIFICATE

This is to certify that the entitled of "COMMUNITY SERVICE PROJECT" is the bonafide record of work carried out by N. Harini Swarajyam (22NHIA0546), A. Vijay Lakshmi (22NHIA0506), A. Yamuna (22NHIA0503), K. Navyanjali (22NHIA0554), K.Naga Bhumika (22NHIA0563), D. Ushasri (22NHIA0532), K. Mahideep (22NHIA0551), N.Ajay (22NHIA0504), K. Leela Manohar (22NHIA0561). My guidance of supervision in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Computer Science & Engineering of Jawaharlal Nehru Technological University, Kakinada.

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Dr.S.H.V.Prasada Rao, M.tech., Ph.D.
Principal

Gudivada,
Date:

Ref: VKR/CSP/2022-23/01

To
The President,
_____
_____
_____

Sir,

Sub: VKR, VNB & AGK College of Engineering, Gudivada - Community Service Project (CSP) – Requesting permission to do CSP program in your village-Reg

▪▪▪▪

I have to inform you that, according **to JNTUK, Kakinada** R20 curriculum **"Community Service Project (CSP)"** submitted in the partial fulfillment of requirement for the award of B.Tech degree. In this regard our students selected your village to do CSP program from **03/7/2023 to 15/7/2023** total l of two weeks. Kindly grant permission to our students to do CSP Program in your village.

Thanking You Sir,

Yours faithfully,

CERTIFICATE:

This is to certify that this project work titled "**SAFETY & SECURITY"** is the bonafide work of N. Harini Swarajyam (22NHIA0546), A. Vijay Lakshmi (22NHIA0506), A. Yamuna (22NHIA0503), K. Navyanjali (22NHIA0554), K.Naga Bhumika (22NHIA0563), D. Ushasri (22NHIA0532), K. Mahideep (22NHIA0551), N.Ajay (22NHIA0504), K. Leela Manohar (22NHIA0561). submitted in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering J.N.T.U, KAKINADA. During the Academic Year 2022-2023.

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Above all, we thank our parents. We feel deep sense of gratitude for our family who formed part of our vision. Finally, we thank one and all that have contributed directly or indirectly to this thesis

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CHAPTER - 1

- Abstract
- Definition
- Introduction

- ABSTRACT :

Latest technological trends lead towards systems connected to public networks even in critical domains. Bringing together safety and security work is becoming imperative, as a connected safety-critical system is not safe if it is not secure. The main objective of this study is to investigate the current status of safety and security co-analysis in system engineering by conducting a Systematic Literature Review. The steps of the review are the following: the research questions identification; agreement upon a search string; applying the search string to chosen databases; a selection criterion formulation for the relevant publications filtering; selected papers categorization and analysis. We focused on the early system development stages and identified 33 relevant publications categorized as: combined safety and security approaches that consider the mutual influence of safety and security; safety informed security approaches that consider influence of safety on security; security informed safety approaches that consider influence of security on safety. The results showed that a number of identified approaches are driven by needs in fast developing application areas, e.g., automotive, while works focusing on combined analysis are mostly application area independent. Overall, the study shows that safety and security co-analysis is still a developing domain.

- **DEFINITION :**

Safety engineering and security engineering as a way of addressing safety/security challenges have developed separately. While the malfunctioning behaviour addressed by safety engineering was the primary concern in such systems, the increased risk of intentionally caused harm required additional focus on security engineering. Nowadays, there is a need to integrate safety and security engineering in such a way that the unreasonable risk of harm due to either malfunctioning or malicious intent is adequately addressed. This is particularly important for highly connected modern safetycritical systems that cannot be considered safe unless they are secure at the same time. The way in which this integration is performed significantly influences the efforts needed to design a safe and secure system. For example, safety and security solutions do not always support each other, e.g., encrypting a message needed for security reasons increases the time needed to deliver the message, which may increase the delivery time over the required safety threshold. If safety

and security are being treated separately and their integration takes place at later development stages, it implies greater effort to harmonise different solutions.

- INTRODUCTION:

With ubiquitous presence of technology and our increased reliance on it, the risk of harm we face due to such technology increases as well. The harm we are exposed to is not just direct physical harm due to for example car accidents, but it includes e.g., financial, environmental, emotional harm, which can also lead to physical harm. Traditionally, different causes that may lead to harm have been treated separately in safety-critical system engineering. For example, unreasonable risk of harm due to malfunctioning behaviour of technological systems is addressed under the umbrella of functional safety, where functional safety is described as “a freedom from unacceptable risk” [1]. With increased connectivity of these systems, the risk of undesirable consequences has increased due to the possibility of an adversary intentionally causing the undesirable consequences. The risk of such intentionally caused harm through the technological systems has been generally addressed by security solutions, which were traditionally analysed and proposed separately from safety solutions [2]. Security is often defined as a system property that allows the system “to perform its mission or critical functions despite risks posed by threats”

CHAPTER – 2

→ COMMUNITY SERVICE PROJECT

- WHAT IS COMMUNITY SERVICE PROJECT?
- EXAMPLES FOR COMMUNITY SERVICE PROJECT
- BENEFITS FOR COMMUNITY SERVICE PROJECT

- **What is community service project?**

Community service is work done by a person or group of people that benefits others**.** It is often done near the area where you live, so your own community reaps the benefits of your work. You do not get paid to perform community service, though sometimes food and small gifts, like a t-shirt, are given to volunteers.

Community service can help any group of people in need: children, senior citizens, people with disabilities, English language learners, and more. It can also help animals, such as those at a shelter, and it can be used to improve places, such as a local park, historic building, or scenic area as well**.** Community service is often organized through a local group**,** such as a place of worship, school, or non-profit organization. You can also start your own community service projects.

Some students are required to complete community service as part of a class requirement in order to graduate high school or become a member of certain organizations, such as the National Honor Society. Adults can also participate in

community service as a way to help others or if they are ordered to do so by a judge.

- **Examples for Community Service Project:**

There are hundreds of ways to participate in community service, depending on your skills and interests. Some common community service examples include:

Working with schoolchildren:

Tutoring children after school, collecting school supplies to donate, planting a school garden.

Working with senior citizens:

Visiting residents of a retirement centre, delivering meals to senior citizens, driving them to appointments.

Improving the environment:

Holding a recycling contest, planting trees, creating a new trail at a nature centre.

Helping low-income people:

Passing out food at a soup kitchen, collecting used clothes to be donated, making first aid kits for homeless shelters.

Benefits from community service project:

There are many benefits of participating in community service, and some of the most important ones are listed below.

Have the opportunity to help others: This is often the most important benefit of community service. Participating in it gives you the opportunity to know that you are improving someone's life and making your community better, and you get to see the direct impact of your work.

Gain hands-on experience: You can learn a lot of skills while performing community service such as construction, painting, customer service, and medical skills. You can also include your community service work on your resume.

Learn about different careers:

Sometimes you can focus your community service in a field you may want to work in down the road. Some examples of this include volunteering at an animal shelter if you are thinking about becoming a veterinarian, working at a hospital if you want to be a doctor, or volunteering in a museum if you like history. The experience gained from community service can help you get an internship or job in the future, and it also gives you the opportunity to see how much you would really enjoy a particular career.

Personal growth: Doing community service has personal benefits as well. It often makes participants more organized, responsible, and compassionate, which are all good qualities to have, as well as qualities that both colleges and employers like to see in applicants.

Gain new friends: A final benefit is that you can meet a lot of great people while doing community service. Community service is often done in groups, so it's easy to make friends with the people you are working with. You may also become friends with the people you are helping, especially if you volunteer at the same place regularly.

Your school or groups you belong to: This can include clubs, places of worship, community centres or any other organizations you are a member

of. To find community service opportunities, check their website, bulletin board, or newsletter. If you are a student, your school may also have a community service club that makes it easier to get involved.

Places where you'd like to volunteer: If you have a specific place where you'd like to perform community service, like a hospital or animal shelter, contact them and ask if they take volunteers.

CHAPTER – 3

About village:

Vadlamannadu is a village located in Gudlavalleru Mandal of Krishna district in Andhra Pradesh, India. According to the 2011 census, the village has a population of 4,316 people, with 2,166 males and 2,150 females. The literacy rate of the village is 65.92%, with 69.07% of males and 62.74% of females being literate. The village has a total of 1,248 houses 1. The nearest town is Pedana, which is approximately 7 km away from Vadlamannadu.

The village is spread over an area of 1241 hectares. It is situated 10 km away from the sub-district headquarter Gudlavalleru and 13 km away from the district headquarter Machilipatnam. Vadlamannadu is also a gram panchayat.


Vemavaram
వేమవరం
Sri ganganamma
talli temple
శ్రీ గంగానమ్మ
తల్లి ఆలయం
Vadlamannadu
Zilla Parishat
High School
జిల్లా పరిషత్
హై పాఠశాల
Water Tank
Sri Kapileswara
Swamy Temple
శ్రీ కపిలేశ్వర
స్వామి ఆలయం

The Importance of Health and Hygiene in Promoting Well-being and Preventing Disease

Health and hygiene are crucial aspects of maintaining overall well-being and preventing the spread of diseases, by practising good hygiene habits and prioritising personal health, individuals can significantly improve their quality of life and contribute to the well-being of their communities.

1. Disease Prevention:

One of the primary reasons health and hygiene are important is their role in preventing the transmission of diseases. Good hygiene practices. such as regular handwashing with soap and water, proper sanitation, and maintaining cleanlirless in living spaces, significantly reduce the risk of contracting infectious diseases. Pathogens, including bacteria, viruses, and other microorganisms, are often transmitted through direct contact with contaminated surfaces or through person-to-person interaction. By practising good hygiene, individuals can minimise the chances of disease transmission and protect themselves and others from illnesses

2. Personal Well-being:

Health and hygiene practices are closely linked to personal well-being. Taking care of one's physical health through regular exercise, balanced nutrition, and adequate rest is essential for overall well-being. These practices strengthen the immune system, improve physical fitness, and contribute to a healthier and more energetic lifestyle. Additionally, personal hygiene habits, such as dental care, skincare, and regular bathing, play a vital role in maintaining mental and emotional well-being.

Feeling clean and presentable enhances self-esteem and confidence, positively impacting interpersonal relationships and overall happiness.

3. Reduced Healthcare Costs:

Adopting good health and hygiene practices can help individuals reduce healthcare costs associated with medical treatments, hospitalizations, and medications. By practising preventive measures, such as vaccinations, regular health check-ups, and healthy lifestyle choices, individuals can reduce the risk of developing certain health conditions. Prevention is often more cost-effective than treatment, and by investing in health and hygiene, individuals can mitigate the financial burden of medical expenses.

4. Improved Productivity:

Health and hygiene have a direct impact on an individual's productivity and performance. By prioritising personal health, individuals experience increased energy levels, improved concentration, and enhanced cognitive function. Regular exercise and a balanced diet contribute to better physical fitness and mental clarity, allowing individuals to be more productive in their work, studies, and daily activities. Moreover, practising good hygiene, such as maintaining cleanliness and grooming habits. promotes a professional and confident appearance, which can positively influence social interactions and career opportunities.

5. Enhanced Social Interactions:

Maintaining good personal hygiene is crucial for positive social interactions. Regular bathing, wearing clean clothes, and practising dental care contribute to a fresh and presentable appearance, boosting confidence and self-esteem. Feeling clean and confident allows Individuals to engage comfortably in social situations, fostering healthier and more fulfilling relationships. Furthermore, good hygiene practices. such as covering one's mouth when coughing or sneezing and regular handwashing, also demonstrate respect and consideration for others' well-being

6. Community Health:

Health and hygiene practices have a broader impact on the well-being of communities. By adopting and promoting good hygiene practices. Individuals contribute to preventing the spread of infectious diseases within their communities. This is particularly important for vulnerable populations such as children, elderly individuals, and those with weakened immune systems. Taking responsibility for personal health and hygiene helps create a safer and healthier community for everyone.

7. Prevention of Antibiotic Resistance:

Proper hygiene practices, including regular handwashing, play a crucial role in preventing the spread of bacteria and reducing the need for antibiotics. Overuse and misuse of antibiotics contribute to the development of antibiotic-resistant bacteria, a significant global health concern. By practising good hygiene, individuals can help reduce the spread of infections, lower the demand for antibiotics, and contribute to the prevention of antibiotic resistance

Health and hygiene are fundamental for maintaining personal well-being. preventing the spread of diseases, and fostering healthy communities. By prioritising these practices, individuals can lead healthier lives. reduce healthcare costs, and contribute to the overall well-being of society. Emphasising the importance of health and hygiene is essential for creating a safer mate prosperous future for all.

Importance Of Health And Hygiene

Oral Hygiene

Bathing Ritual

Hair Care

Foot Hygiene

Toileting Hygiene

Hand Hygiene

Coughing and Sneezing Hygiene

Home Hygiene

PROBLEMS IDENTIFIED

Low adherence to hand hygiene practices:

The survey reveals that a significant portion of respondents do not wash their hands with soap and water frequently or effectively, highlighting the need for education and awareness campaigns to promote proper hand hygiene

Inconsistent oral hygiene habits:

The survey reveals that a considerable number of respondents do not brush their teeth twice which can lead to-rental health issues This information can inform dental health campaigns and interventions to improve oral hygiene practices

Lack of awareness and knowledge:

The survey reveals gaps in women's awareness and knowledge about venous aspects of their health and hygiene This could include insufficient understanding of recommended screenings, proper hygiene practices or signs and symptoms of specific conditions

Limited access to healthcare:

The survey highlights burners to accessing necessary healthcare services such as gynaecological examinations, mammograms or STI testing Lack of healthcare infrastructure financial constraints or cultural factors may contribute to limited access

SOLUTIONS

To address the problems identified through the survey, here are some potential solutions

1. Education and Awareness Campaigns:

Develop comprehensive campaigns to raise awareness about the importance of hand hygiene and proper handwashing techniques. This can include informational materials, demonstrations, and community outreach programs

Implement oral health education programs targeting all age groups emphasising the significance of regular brushing, flossing, and dental check-ups

2. School and Community Programs

Introduce health and hygiene education programs in schools integrating hand hygiene and oral health into the curriculum This can help establish good habits from an early age

Collaborate with community centres, workplaces and healthcare facilities to conduct workshops and interactive sessions on health and hygiene practices

3. Accessible Information and Resources:

Develop easily accessible and culturally sensitive educational materials on vanous health and hygiene topics including proper handwashing, oral health, and common health concerns

Utilise various platforms such as websites mobile applications and social media channels to disseminate information and provide resources on health and hygiene practices.

4. Healthcare Infrastructure and Services:

Improve access to healthcare services by increasing the availability of gynaecological examinations mammograms, and STI testing through clinics mobile health units, or telemedicine platforms Address financial barners by implementing affordable or free healthcare services for preventive screenings and hygiene-related consultations

5. Partnerships and Collaborations:

Collaborate with local healthcare providers, community organisations. and non-governmental organisations to implement joint initiatives targeting health and hygiene improvement

Engage with schools universities and workplaces to establish partnerships and integrate health and hygiene practices into their policies and programs

6. Targeted Outreach:

Conduct targeted outreach programs for vulnerable populations such as low-income communities elderly individuals or ethnic minorities to ensure they receive adequate education and access to healthcare services

Engage community leaders influencers and healthcare professionals to advocate for health and hygiene practices and encourage behaviour change within their respective communities

7 Monitoring and Evaluation:

Establish mechanisms to monitor and evaluate the effectiveness of implemented interventions and campaigns including surveys feedback mechanisms and data collection on hygiene practices and healthcare utilisation

Use the collected data to continuously improve and refine interventions ensuring they are tailored to the specific needs and challenges of the target population

By implementing these solutions, it is possible to address the identified problems and promote better health and hygiene practices, leading to improved overall well-being and reduced health risks within the surveyed population.

SOME SURVEY PICTURES

DRT
UI9J8


GPS Map Camera
Vadlamannadu, Andhra Pradesh, India
8432+WJ, Vadlamannadu, Andhra Pradesh 521331, India
Lat 16.304295°
Long 81.101694°
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8443+PQC, Vulavalapudi - Vadlamannadu Rd, Vadlamannadu, Andhra Pradesh 521331, India
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06/07/23 11:18 AM GMT +05:30
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8443+PQC, Vulavalapudi - Vadlamannadu Rd, Vadlamannadu, Andhra Pradesh 521331, India
Lat 16.305891°
Long 81.103493°
06/07/23 11:22 AM GMT +05:30
Google


GPS Map Camera
Vadlamannadu, Andhra Pradesh, India
Mainroad,P Nagabushanamrao Shopping Complex, 3-14-b,
Vadlamannadu, Andhra Pradesh 521331, India
Lat 16.308935°
Long 81.106729°
07/07/23 10:28 AM GMT +05:30
Google


GPS Map Camera
Vadlamannadu, Andhra Pradesh, India
8454+MR5, Vadlamannadu, Andhra Pradesh 521331, India
Lat 16.309103°
Long 81.10715°
07/07/23 03:11 PM GMT +05:30
Google


GPS Map Camera
Vadlamannadu, Andhra Pradesh, India
8465+2FV, SH 304, Vadlamannadu, Andhra Pradesh 521331, India
Lat 16.309908°
Long 81.108219°
10/07/23 03:55 PM GMT +05:30
Google


GPS Map Camera
Vadlamannadu, Andhra Pradesh, India
8465+2FV, SH 304, Vadlamannadu, Andhra Pradesh 521331, India
Lat 16.310724°
Long 81.109044°
12/07/23 13:07 PM GMT +05:30
Google


GPS Map Camera
Vadlamannadu, Andhra Pradesh, India
8465+2FV, SH 304, Vadlamannadu, Andhra Pradesh 521331, India
Lat 16.30995°
Long 81.108384°
11/07/23 03:16 PM GMT +05:30
Google


GPS Map Camera
Vadlamannadu, Andhra Pradesh, India
8465+875, Vadlamannadu, Andhra Pradesh 521331, India
Lat 16.31096°
Long 81.109198°
13/07/23 12:09 PM GMT +05:30
Google

CONCLUSION

This survey's results underscore the interconnectedness of health and hygiene revealing the far-reaching implications for both individuals and the broader community The data highlights not only areas of improvement but also successes showcasing the impact of existing health education efforts By fostering a culture of proactive wellness and emphasising the significance of hygiene practices, we can fortify our collective defence against preventable nesses As we reflect on the survey's insights. let us harness this knowledge to forge partnerships develop targeted strategies and ignite a sustained commitment to health and hygiene that fosters a healthier happier future for everyone

In conclusion the comprehensive health and hygiene survey conducted has shed valuable light on the prevailing practices and awareness levels within the community. The findings underscore the pivotal role that proper health and hygiene routines play in safeguarding individual well-being and preventing the spread of nesses By understanding the gaps identified in this survey we are empowered to implement targeted interventions education initiatives and resource allocation to elevate the overall health standards within our community As we move forward, let these insights serve as a catalyst for positive change encouraging us all to embrace healthier habits and phoritise hygiene ultimately creating a stronger and more resilient community for generations to come.