A Community Service Project Report on

FOOD WASTAGE MANAGEMENT

Submitted in partial fulfillment of the requirements for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

By

CHINDADA NANDINI **20A31A05D4**

Under the guidance of

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Assoc.Professor

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PRAGATI ENGINEERING COLLEGE

(Approved by AICTE, Permanently Affiliated to JNTUK, KAKINADA & Accredited by NBA)

1-378, A.D.B. Road, Surampalem, Near Peddapuram-533437

2020-24

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CERTIFICATE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

This is to certify that the Community Service Project Report entitled **"FOOD WASTAGE MANAGEMENT"** is being submitted by **CHINDADA NANDINI (20A31A05D4),** in partial fulfillment for the award of the Degree of **Bachelor of Technology** in **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING** of Pragati Engineering College, for the record of bonafide work carried out by him/her.

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ACKNOWLEDGEMENT

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I would like to thank my project guide, Dr.D.V.Manjula,Ph.D,Department of Computer Science and Engineering, for her valuable time and continued assistance for the successful completion of the project.

I would like to thank my project coordinator Mr. Sayathan,Asst.Professor, Department of Computer Science and Engineering, for his valuable time and continued assistance for the successful completion of the project.

I would like to express my gratitude towards my parents and cousin for their kind cooperation and encouragement, which helped me in completing this project.

I would like to be thankful to the managers and workers of the restaurants and function halls that I have visited in the places of Kakinada, Samalkot, and Peddapuram.

PART-A

1.About the Village / Habitation.

KAKINADA:

Fig.1-City,Kakinada District,Andhra Pradesh

SAMALKOT:

Fig.2-Town,Kakinada District,Andhra Pradesh

PEDDAPURAM:

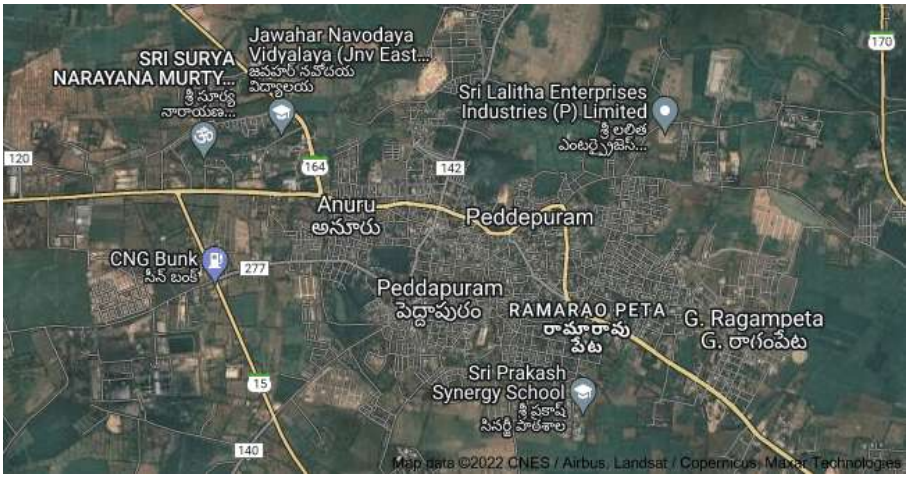


Fig.3-Urban,Kakinada District,Andhra Pradesh

Village 1:Kakinada

Kakinada is a metropolitan city in Kakinada district of Andhra Pradesh,India.Although Kakinada city has population of 312,538; its urban /metropolitan population is 443,028 of which 217,459 are males and 225,569 are females.

Number of Restaurants:110

Number of Function Halls:100

Number of Orphanages:15

Village 2:Samalkot

Samalkot is a Municipality city in district of Kakinada,Andhra Pradesh.Although the Samalkot Municipality has population of 56,864 of which 28,115 are males while 28,749 are females

Number of Restaurants:20

Number of Function Halls:8

Number of Orphanages:10

Village 3:Peddapuram

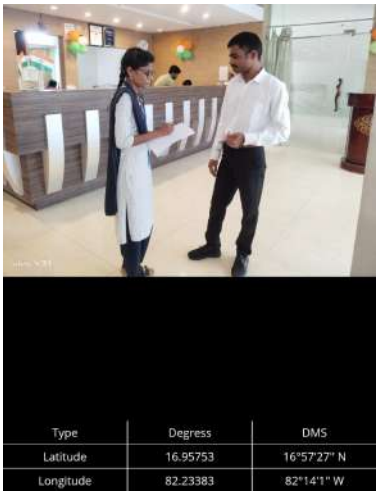
Peddapuram is a mandal in district of Kakinada,Andhra Pradesh state. Although Peddapuram has a population of 73,922, of which 37,379 are males, and 36,543 are females.

Number of Restaurants:20

Number of Function Halls:15

Number of Orphanages:8

2.Socio-Economic Survey of the Village/Habitation.



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Longitude	82.23383	82°14'1" W

Fig.1

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Fig.2

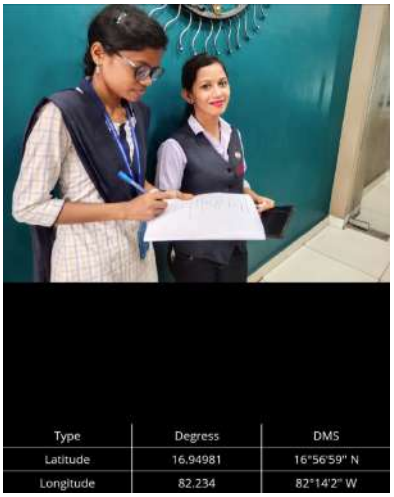

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Fig.3

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Fig.4

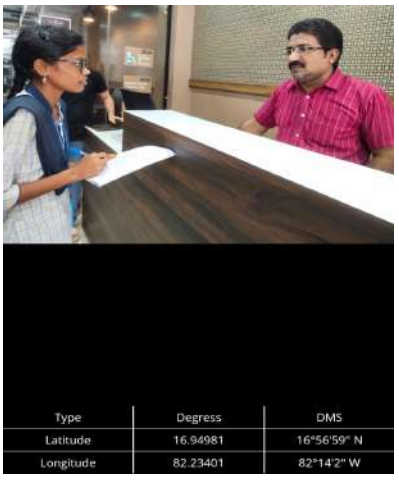

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Fig.5

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Fig.6

Type	Degress	DMS
Latitude	16.96472	16°57'52" N
Longitude	82.23537	82°14'7" W

Fig.7

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Latitude	16.96155	16°57'41" N
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Fig.8

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Fig.9

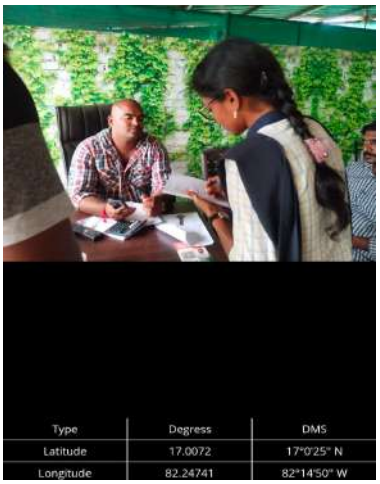

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Fig.10

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Fig.11

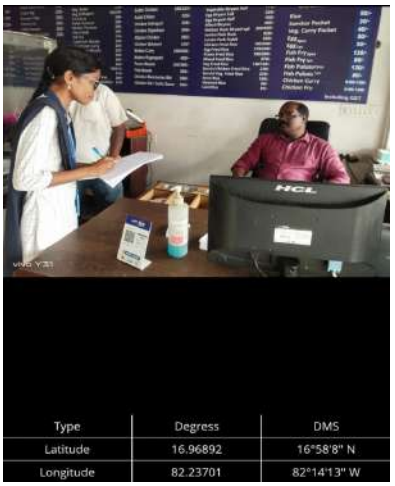

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Fig.12

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Fig.13

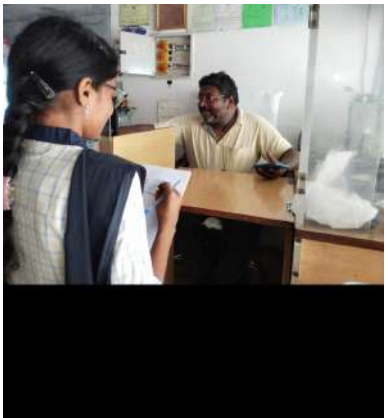

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Fig.14

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Fig.15

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Fig.16

Type	Degress	DMS
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Fig.17

Type	Degress	DMS
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Fig.18

Type	Degress	DMS
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Fig.19

Type	Degress	DMS
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Fig.20

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Fig.21

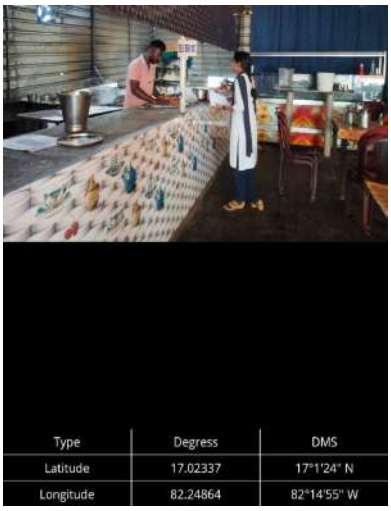

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Fig.22

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Longitude	82.24762	82°14'51" W

Fig.23

Type	Degress	DMS
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Fig.24

Type	Degress	DMS
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Fig.25

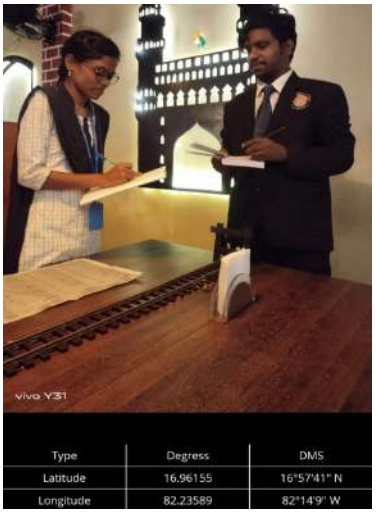

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Fig.26

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Fig.27

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Fig.28

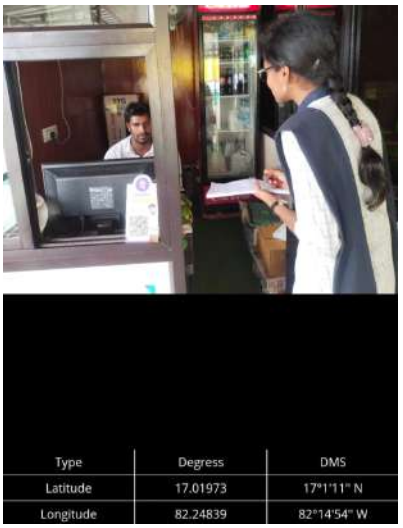

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Fig.29

Type	Degress	DMS
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Longitude	82.2357	82°14'8" W

Fig.30

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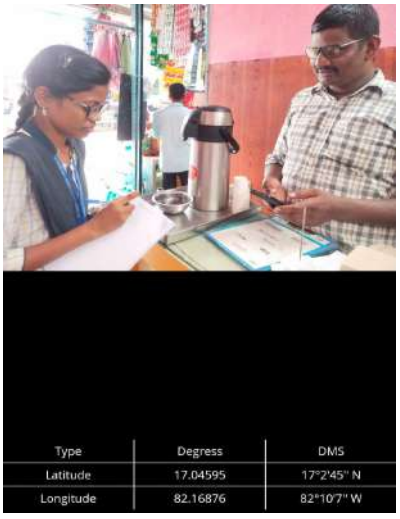
Fig.31



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Longitude	82.16876	82°10'7" W

Fig.32

Type	Degress	DMS
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Longitude	82.16793	82°10'4" W

Fig.33

Type	Degress	DMS
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Fig.34

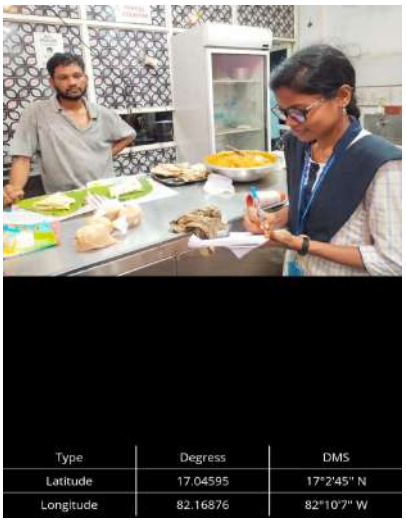

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Fig.35

Type	Degress	DMS
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Fig.36

Type	Degress	DMS
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Fig.37

Type	Degress	DMS
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Fig.38

Type	Degress	DMS
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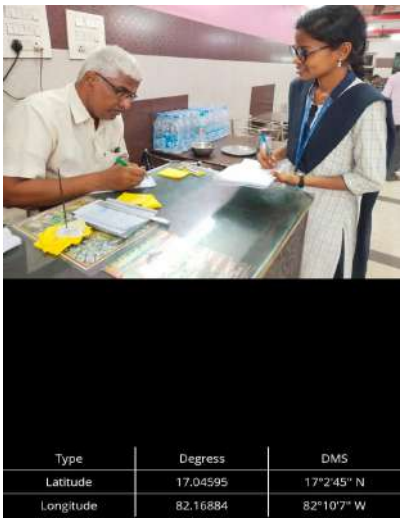
Fig.39



Type	Degress	DMS
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Longitude	82.16884	82°10'7" W

Fig.40

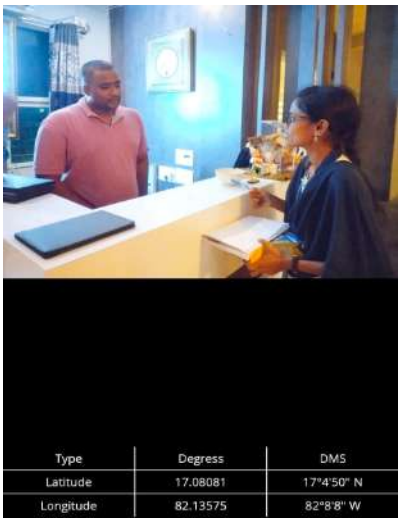

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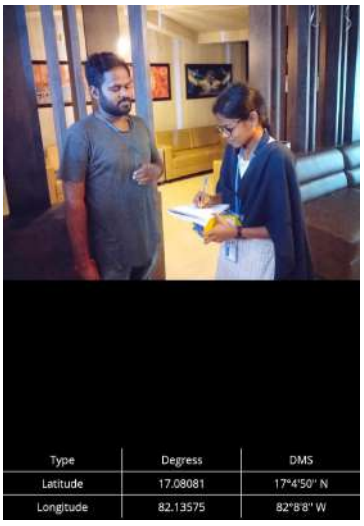
Fig.41



Type	Degress	DMS
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Fig.42

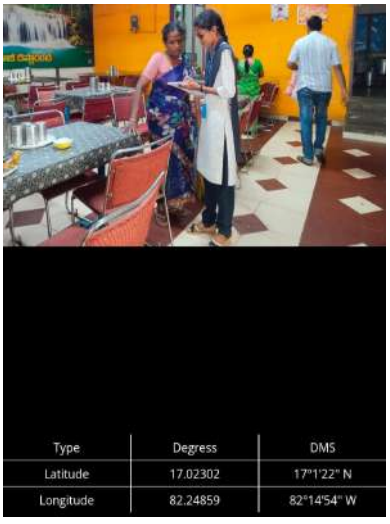

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Fig.43

Type	Degress	DMS
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Longitude	82.24761	82°14'51" W

Fig.44

Type	Degress	DMS
Latitude	17.04595	17°2'45" N
Longitude	82.16884	82°10'7" W

Fig.45

Serial No	Name	Age	Gender	Address	Location	Profession	Phone No
1	P.Raju	20	M	Yati	Kakinada	Cashier	8328662544
2	Karim	45	M	G.K Residency	Kakinada	Owner	9701536786
3	Surya Prakash Devarakonda	50	M	G.K.Residency	Kakinada	Manager	9866579570
4	B.Manikanta	28	M	Dolphin Garden Restaurant	Kakinada	Owner	9701711112
5	K.Murthy	54	M	Haveli	Kakinada	Cashier	9912299527
6	Raju	52	M	Haveli	Kakinada	Servant	9912299527
7	K.Raja	56	M	Royal Kitchen Restaurant	Kakinada	Manager	9994536818
8	Madhusmitha	24	F	Royal Kitchen Restaurant	Kakinada	Servant	9994536818
9	K.Durgaji	30	M	Greenland Restaurant	Kakinada	Owner	9573318199
10	Ramesh	28	M	GreenLand Restaurant	Kakinada	Servant	8068993034
11	Kasi Viswanadham	42	M	Yati(Parcels)	Kakinada	Cashier	9110773406
12	Rakesh	22	M	Kotaiah’s Foods	Kakinada	Manager	9948820022
13	Manikanta	22	M	Sri Yati Restaurant	Kakinada	Supervisor	8919545802
14	Deevena	38	F	Sri Yati Restaurant	Kakinada	Worker	9502523832
15	Suman Babu	40	M	Vanitha Vantillu	Kakinada	Cashier	8897871727
16	Ravi Teja	26	M	Vanitha Vantillu	Kakinada	Servant	8897871727
17	Ranganadham	39	M	Saampradaya Food Court	Kakinada	Manager	9866607598
18	Siva Rama Kumar	37	M	Saampradaya Food Court	Kakinada	Incharge	9989011528
19	Vickey	26	M	Venky Residency	Kakinada	Servant	8842302266
20	T.Kanaka MahaLakshmi	35	F	Venky Residency	Kakinada	Worker	8842302255
21	Anuk Sarkar	50	M	Jaya Residency	Kakinada	FM Manager	9866319733
22	Krishnam Raju	24	M	Jaya Residency	Kakinada	Servant	0884-2372314
23	Surya Prakash	33	M	Seasons 5	Kakinada	Captain	9032314444
24	S.Dasharadha	56	M	Srinivasa Varma’s Fast Food Family Restaurant	Kakinada	Owner	9866094332
25	Sakunthala	45	F	Srinivasa Varma’s Fast Food Family Restaurant	Kakinada	Worker	9030522159

26	Ramu	30	M	Foodie Train Restaurant	Kakinada	Partner	9177776847
27	G.Santhoshi	26	F	Foodie Train Restaurant	Kakinada	Worker	9160896777
28	Dhanush	28	M	Foodie Train Restaurant	Kakinada	Captain	9177776847
29	Lakshmi	26	F	Foodie Train Restaurant	Kakinada	Servant	9160896777
30	Sathish Reddy	45	M	Akshaya Family Restaurant	Kakinada	Manager	7075237526
31	Rafi	29	M	Akshaya Family Restaurant	kakinada	Servant	9573318199
32	Siva	25	M	Arali Restaurant	Kakinada	Supervisor	7095757695
33	Ram	50	M	Sri Balaji Restaurant	Kakinada	Manager	8848822888
34	B.Rajeshwari	36	F	Sri Balaji Restaurant	Kakinada	Worker	8848822888
35	Ch.Meri	38	F	Sri Balaji Restaurant	Kakinada	Servant	8848822888
36	Surya	29	M	DurgaAmbica Restaurant	Kakinada	Owner	9849428405
37	M.Sarada	52	F	Sri Hari Restaurant	Kakinada	Owner	9502523832
38	Krishna	49	M	Sri Hari Restaurant	Kakinada	Chef	9515971797
39	K.Venkata Lakshmi	33	F	Greenleaf Family Restaurant	Kakinada	Owner	9959738399
40	K.Ramya	29	F	Greenleaf Family Restaurant	Kakinada	Servant	9030522159
41	RamaRao	78	M	Greenleaf Family Restaurant	Kakinada	Cashier	9676490590
42	M.B.Vaheede	63	M	Royal Daawat Restaurant	Kakinada	Owner	9959213724
43	Siva Shankar	48	M	Vasista Multicuisine Restaurant	Kakinada	Partner	833280066
44	Kumari	38	F	Vasista Multicuisine Restaurant	Kakinada	Worker	833280066
45	Anantha Lakshmi	32	M	Vasista Multicuisine Restaurant	Kakinada	Servant	833280066
46	Nanaji	40	M	Poorna Kalyana Mandapam	Samalkot	Manager	8374186789
47	M.Sathish	36	M	Poorna Kalyana Mandapam	Samalkot	Worker	8374186789
48	Appalanaidu	50	M	K.K.Jubilee Resorts(convention Hall and Kalyana Mandapam)	Peddapuram	Manager	7207667252
49	M.Prasad Babu	50	M	Sri Matte Adinaranaya Arya Vysa Kalyana Mandapam	Peddapuram	Owner	9866607598

Enqueries and Queries

1.How much food is prepared every day, approximately?

A. That is based on the person's count who visited that particular day , and approximately prepared for 80 members, i.e., 25 kg of food.

2.How many customers visit the restaurant daily?

A. There are approximately 60-80 members.

3.How many types of recipes are prepared per day?

A.Approximately 20–25 types of recipes are prepared.

4.Which type of food is served most often?

A. Spicy dishes such as Biryani and Staters

5.Which type of food is left over the most?

A. Spicy foods like Biryani

6.What chemicals are used to preserve the food?

A. There are three categories of chemical preservatives commonly used in foods: Benzoates (like sodium benzoate) Nitrites (like sodium nitrite) Sulphites (like sulphur dioxide)

7.How many days was the food preserved?

A. Approximately 3-4 days.

8.Are there chemicals that show any impact on human health?

A. We used safety chemicals, but sometimes as a result it becomes less harmful.

9.What amount of food is left over?

A.According to data collected from restaurants, nearly 5–10% of food is wasted every day.

10. How is left over food managed?

A.Most of the wasted food is given to workers or thrown in the garbage.

11. The food that is wasted per day is sufficient for how many people?

A.Approximately 3-4 people

12. What can you do to help prevent food waste?

A.Preparing sufficient food is all we need.

13. How do restaurants maintain the quality of food?

A.Document ingredients (like quality of purchase, purchase date, expiry date,nutrition

value) and define standards for ensuring food safety and also keep track of inventory for food production.

14. In which seasons do you see the most food waste?

A.Mostly April-May and shortly into June months due to the functions like marriages.

15. At any time, have you donated leftover food to any orphanages?

A.Yes, we occasionally give food to people on the sidewalk. Mostly, the workers will take away the food.

3. Problems identified for the wastage of Food

- Lack of estimation of Customers.
- Dumping excess food into garbages without donating
- Food wastage is more during wedding seasons.
- Throwing away the food item which they don't like-Consumer behaviour.
- Many of the poor people(hungry and homeless) starving due to lack of food.
- Excess food is being dumped and hungry mouths are going unfed.
- Decreases the nutrition value when food stored for long time in fridges.
- Over food serving to customers.
- Spoilage of food when preserved for more time.
- Lack of awareness about the food waste problem.
- Human error-Lack of appropriate planning.
- Aging Ingredients used for preservation of food.
- Lack of knowledge of how many customers attend the function.
- 10% quantity of food wasted per day.
- Half-eaten plates.

4.Short-Term and Long-Term Action Plans

Short-Term:

Food waste is a big problem in 21st century society, and in order to stop this, we conducted an awareness camp to share our knowledge gained from the survey of the field visit programme in restaurants and function halls in our locality for reducing food waste and donating the leftover food to the nearby orphanages.

Long-Term:

After the field visit, we identified that much of the food is being wasted in restaurants and function halls. As a result, we decided to create an application to aid in the reduction of food waste and donate the excess food to the needy. We built a web application in which the members of the restaurant and function halls provide information about leftover food, and we make use of the data and forward this information to the nearest orphanages to collect the food.

5.Community Awareness Programmes

- As a part of our 7-day awareness programme campaign, we interacted with the locals of Kakinada city and told them about food wastage and people who are starving due to lack of food, and we motivated them to donate food to the needy instead of throwing it away.

Fig.1

- DAY-1: On the first day of our campaign, we gathered about Seven Members and gave awareness about the importance of food.

Fig.2

- DAY-2: On the second day of our campaign, we gathered about Eight Members and made them aware of which types of food should be eaten and which should not.

Fig.3

- DAY-3: On the third day of our campaign, we gathered about Nine Members and told them about the consequences of eating junk food and also about the advantages of eating healthy food.

Fig.4

- DAY-4: On the fourth day of our campaign, we gathered about Seven Members and brought awareness about the amount of food wasted in restaurants and function halls.

Fig.5

- DAY-5: On the fifth day of our campaign, we gathered about Six Members, and briefly explained about the amount of food produced annually in India, the amount of food consumed, and the amount of food.

Fig.6

- DAY-6: On the sixth day of our campaign, we gathered about Eight Members and made them aware of how the people in the orphanages are facing tough times due to a lack of food.

Fig.7

- DAY-7: Finally, on the seventh day of our campaign, we gathered about Six Members and made them think before throwing the excess food into the garbage, and we highly motivated them to not waste the food and donate the leftover food to the poor and needy instead of wasting it.

PART-B

ABOUT:

- **Project Title :** Food Donation Management
- **OverView :** Donation of leftover food from restaurants and function halls orphanages
- **Project Justification :**
- **Objectives :** To reduce food wastage and help the needy
- **Phases of Work :** Our work has been classified into 4 phases

Phase 1: Getting Domain Knowledge

Phase 2: Designing

Phase 3: Building Code

Phase 4: Testing Code

REQUIREMENT:

Software Requirements:

Frontend:

- **HTML**
- **CSS**

Backend:

- **JAVA SCRIPT**

We require some system software applications to run, like Visual Studio Code, Notepad.

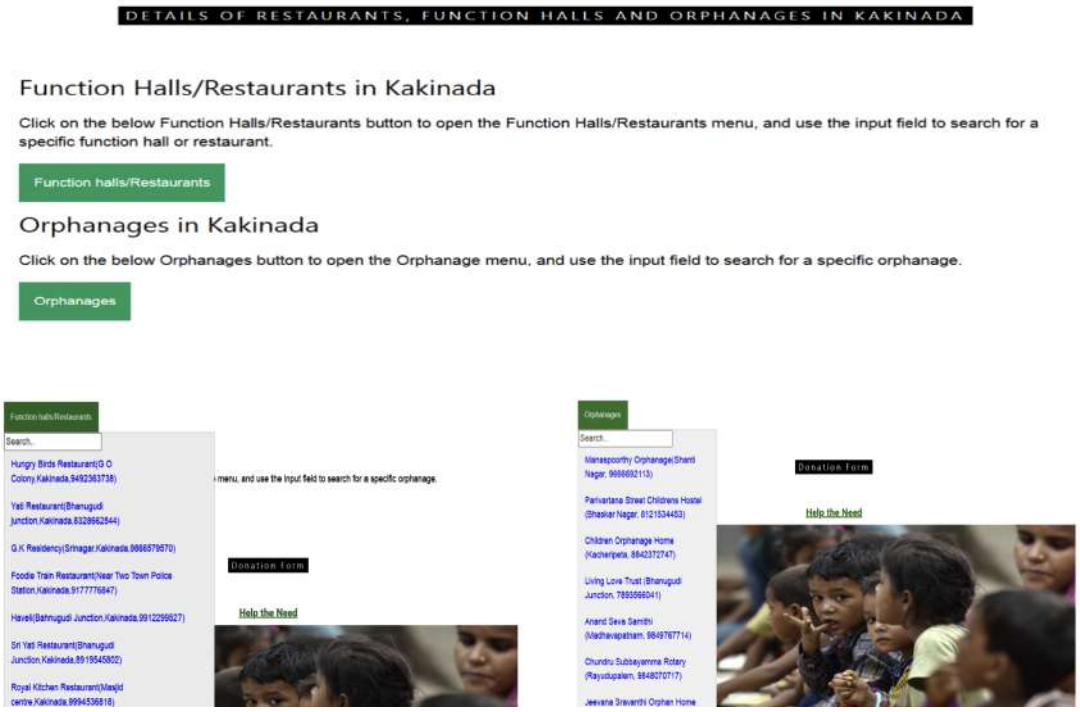
DESCRIPTION :

In this project, we have given a solution to the problem that we have identified regarding food wastage in our survey. This represents crowd resourcing on food waste management, where the leftover food is donated to the needy and to people who lack or suffer from food. The need for donations is due to the wastage of food. In this present scenario, food wastage is present in large quantities in many places, like restaurants, weddings, social functions, college canteens, and many other social events. Some people donate food manually by visiting some organizations. In order to reduce the issue of food wastage, we designed a new approach where leftover food is donated to needy people or organizations, benefiting the needy. The system is an effective means of donating food to organizations, orphanages, etc., over the Internet. A new donation request will be created on the portal, and once the request is accepted, the food request from food donor to food receiver will be processed**.**

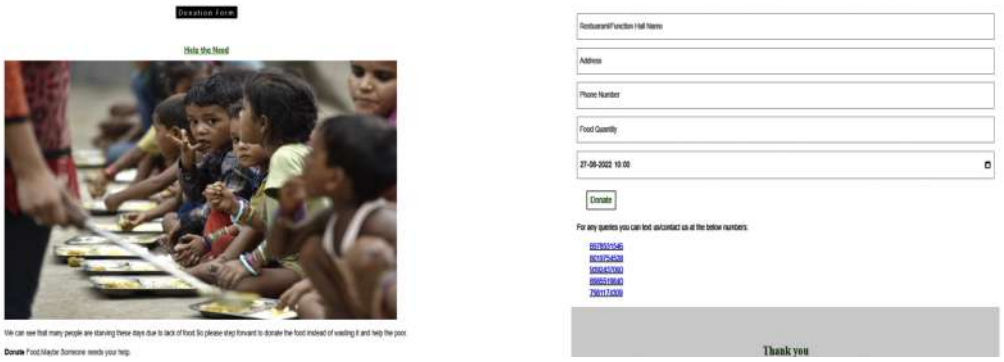
HOME **ABOUT**

OUR WORK

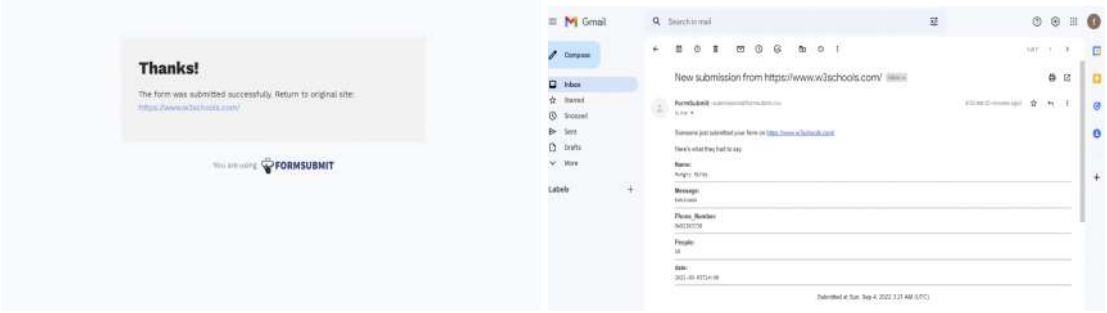
DETAILS



DONATION



RECEIVING DETAILS



PART-C

1.Recommendations and Conclusions

Our study has looked into the problem of food waste, where excess or leftover food is wasted instead of being donated. So we thought of creating a web application in which the user gives information regarding the leftover food, and this data is further processed and sent to the nearest orphanages,so that we can justify the value of food and hunger. The approach was flexible and user-friendly.

One of the primary applications of this food waste management system is to make use of leftover food by feeding the hungry. Our proposed solution reduces food waste by facilitating food sharing in groups or orphanages using technology. This research is the first step toward developing a better system to reduce daily food waste.

Our future work is aimed at extending our application by adding the location facility . The donating user either identifies the location of the shared food or has control over sharing the food to a specific location.

2.Reference links

[1] **https://www.justdial.com/Kakinada/Restaurants/nct-10408936**

[2]https://www.justdial.com/Kakinada/Banquet-Halls/nct-10035861

[3] **https://www.justdial.com/Kakinada/Orphanages-For-Children/nct-10960119**

Reference Books

[1] Author: John H.Green

Book: Food Processing Waste Management

Publisher : New India Publishing Agency (1 January 2011)

Language : English

[2]Author: Dr. Charis Galanakis

Book: Food Waste Recovery

Publisher : Academic Press; Nil edition (21 July 2015)

Language : English

[3]Author: Rajesh Banu

Book: Food Waste to Valuable Resources

Publisher : Academic Press; 1st edition (28 April 2020)

Language : English