



MARSANDRA VILLAGE ADOPTION

2018-19

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COMMITTEE

ADVISORY TEAM:

Dr.Sanjay Jain

Principal | CMR Institute of Technology, Bengaluru

Dr. B Narasimha Murthy

Vice-Principal | CMR Institute of Technology, Bengaluru

CORE TEAM:

Chief Coordinator:

Dr. Sharmila K.P

Professor | CMR Institute of Technology, Bengaluru

Student Coordinator:

Aarathi Nair

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ABSTRACT

This report contains the details about all the activities that were conducted under the Adoption of Village Marsandra. The activities are described event wise dates accordingly. The information about the various programs and technical projects undertaken by CMRIT for Marsandra Village are mentioned in detail.

ACKNOWLEDGEMENT

The satisfaction and euphoria that accompany a successful completion of any task would be incomplete without the mention of people who made it possible, success is the epitome of hard work and perseverance, but steadfast of all is encouraging guidance.

So with gratitude we acknowledge all those whose guidance and encouragement served as beacon of light and crowned our effort with success.

We would like to thank Sri. K.C. Ramamurthi, IPS, Chairman CMR group of institutions for his never-ending support as well providing us with such an opportunity to uplift Marsandra.

We would also like to thank the Village Marsandra Chairman Mr. Anjinappa (Puttu) and the village folk for providing us the opportunity to develop the village and supporting us entirely in the execution of all the activities and projects that were planned.

INTRODUCTION

Village Adoption scheme is model for rural development that is undertaken by sponsoring institutes such as banks, universities etc. to help in the upliftment of the people of the adopted village.

Gram Panchayat, Marsandra has stepped up to take initiatives to work for the betterment of the village through various schemes. The members of Gram Panchayat have planned the developmental activities and monitor the implementation in association with government and NGOs.

CMR Institute of Technology (CMRIT) is a pioneer institute in Bengaluru with its curriculum tailored to teach the students real world skills and make them efficient problem solvers. The institute emphasizes on collective growth through creation and dissemination of knowledge. The student communities within CMRIT act as a platform that provides an opportunity for young men and women to enhance the knowledge and skills that will assist them in personal development, to address the physical and social needs of their communities. The student communities actively take part in the brainstorming of solutions to the countless problems faced by the rural areas. The institute has always encouraged and supported a collaborative atmosphere that give rise to technological and social innovations.

Both the parties have a common goal and interest towards working at grass root levels for social empowerment, application of technology for social needs, and rural development. The activities carried out were in the area of education, healthcare, agriculture, energy, environment etc.

OBJECTIVES OF VILLAGE ADOPTION

Village Adoption Scheme is to equip and familiarise the students and faculty with the socioeconomic dimensions of the rural communities, sustainable use of natural resources, changing perceptions & aspirations, instilling innovative effort for sustainable development and inspire the community to roll out strategies, methodologies, processes to develop sustainably and create cohesive communities where every individual gets equal opportunity to realise his/her potential. Through this process they learn, document the ups and downs of the process which can help them in revising strategies for better training and come up with new models of rural development for replication elsewhere by all stakeholders.

The objective gives the overall view of the possible activities that are aimed to be carried out as well as gives the basic understanding between the Gram Panchayat and CMRIT, Bengaluru.

- I. CMRIT shall engage in a data collection and surveying of the village to estimate various demographic parameters such as population, male to female ratio, employment statistics, educational backgrounds, issues faced by people, etc. and the report on the same will be drafted.
- II. CMRIT shall assist in organizing socially benefitting events. The event schedule, date and time of the same shall be decided with mutual consent of the authorities concerned.
- III. CMRIT shall provide for skill development that aid in the improvement of education and technical skills of the villagers.
- IV. Both the parties will jointly organize community participation activities, seminars and awareness sessions on mutually agreed upon topics from time to time.
- V. CMRIT shall strive to improve the cleanliness and hygiene standards of the residing people of the village.
- VI. CMRIT shall support in the arrangement of medical expert visits that help in the organizing of health checkups in the village.

- VII. CMRIT shall be expected to put in efforts to introduce basic level of technology to the citizens that help in improving the living standards of the village.
- VIII. Multiple visits to the village by the students and faculty of CMRIT to be conducted that encourage hands on experience and transfer practical skills.
- IX. CMRIT shall provide support and assistance for the development and maintenance of village infrastructure.
- X. CMRIT shall strive to come up with innovative technological solutions that that improve the quality of life among the villagers.
- XI. Students and CMRIT, Bengaluru may use the learning's, data, results, prototypes, applications, photographs, and information through this association for their academic needs, internal and external competitions, empowerment of other villages, filing patents, presentations and reports submission to regulatory or other internal and external bodies

Term of Adoption:

The Adoption and all the developmental activities planned were effective from 27th October 2018 and were valid for a period of one year from the effective date.

DOCUMENTATION & REPORTING

(Descriptive & Video)

The entire process of adopting a village has a strong emphasis on **documentation** in order to make it a more learning experience. Hence, documentation from the stage of base-line survey to achievement of deliverable, the teams have to generate individual documentation report. The documentation should consist of narration on approach and process adopted, experiences, difficulties while implementing the action/intervention, change in strategy (if any), results experienced, evolving theoretical framework etc. The study should also ensure collection/documentation of field based photographs on a regular basis. While attempting documentation the relationship between practical action and the theoretical background thereof has to be maintained. Even the failure cases of intervention are required to be documented.

VILLAGE ADOPTION SITE VISIT

DATE: 12th October 2018

Meeting point -CMR IMS AT 8.00AM. Faculty and student coordinators of CMRIT left to the GRAM PANCHAYAT PRESIDENT'S house. A healthy discussion over the present scenario of the remote village took place.

We were told that the Govt. school building collapsed a few months ago and the school was shut for about 5 years. There were issues related the street lights, roads, cattle sheds etc. The people of the village gave us a lot of attention and love. The village is at a very remote place, were the transportation facilities are good but not the roads. The people whoever could afford to buy cows on loans also went to work as daily wagers. There was a very good source of water, but improvement in the pipelines and drainage was necessary. There was lack of literacy as passing grade 10 was considered like holding a degree.

Faculty coordinators DR.B Narsimhamurthy (Vice Principal), Prof. Sharmila K.P (EE&C Cell), Prof. Girish (ROTARACT), Prof. Manjunath and Prof.Naresh Dixit (NSS) were accompanied by the student coordinators Kausheesh.G (NSS) and Rtr.Sophia (Rotaract Club)

The requirements of the villagers were as follows:-

- School Building with open gym & play area
- Drainage System
- Cattle Mats
- Borewell
- Washrooms
- RO Plant
- Gobar Gas Plant
- Roads
- High Mast Light at the Villlage centre
- A Meeting Zone
- Plant more trees with tree guards
- Buy Cattle

The visit ended at 1.00pm, with a good service of fresh tender coconut and we all came back to college.





INAUGURATION OF VILLAGE ADOPTION

DATE & TIME: 27th October 2018, 8:30am-2pm

VENUE: Marasandra Village

NO.OF.ATTENDEES:130

DESCRIPTION

The main agenda for the day was to complete surveying in all the 220 houses that were part of Marsandra. After arriving at the site, the team leads were made to identify the boundary lines for their respective grids. The Memorandum of Understanding (MoU) was signed between CMRIT and Marsandra village. Shortly after, the principal along with vice-principal and the chairman of the village addressed the crowd and applauded the students for taking up such a task. Briefly after that, the students moved on to surveying activity and it was completed in 2 hours. After all the 12 teams completed the tasks assigned to them, departure plans were initiated. Prof. Sharmila (Head, EE&C cell) along with Prof. Girish(Rotaract) and Prof. Naresh(NSS) came together to achieve the initiative along with the respective student heads; Rtr.Aarathi,Rtr.Sophia and Kausheesh.

SUMMARY

The enthusiastic and hopeful crowd of 125 students (60 students from NSS, 60 students from Rotaract and 25 students from Innovation club) and faculty departed from the CMRIT campus at 8:30AM.The 90 minute journey till Marsandra was filled with excitement and hopefulness on the task ahead. The team of students and faculty arrived around 10AM at the village centre. With the guidance of Prof. Naresh, the 12 grids were identified and noted by all the 12 team leads. Soon after, the MoU was signed between Marsandra village and CMRIT with the village chairman and the Principal as representatives for both the parties. The principal Dr.Sanjay Jain and the vice-principal Prof. B.Narasimha Murthy addressed the joint crowd of students, teachers and villagers sharing their encouragement and support for the initiative. At 10:45AM, the teams made, moved on to the task assigned and conducted survey in the allocated grids using the village household survey that was prepared beforehand. A few students filled the village survey form taking help and inputs from the ex-chairman Mr Hemanathappa, of the village. Within 2 hours, at

12:45PM the task assigned was completed and all the teams reported back to their club heads at the starting points. During lunch, the experiences and reports were exchanged, shared and compared. After lunch, departure arrangements were made and after exchanging their goodbyes with the villagers, the volunteers left to return to the city. The overall experience was a benefitting and heart-warming experience for everyone that was involved.

CONCLUSION

The major problems faced by the villagers included water supply, electricity supply and poor drainage systems. The villagers requested for a large central street light for the village center that acts as the bus stop for the village as well. Overall, the village seemed to be having varied levels of households in terms of income as well as lifestyle conditions.







MARSANDRA VILLAGE PROFILING

INTRODUCTION:

The Demographic profiling of the Adopted Village is as per the data collected. MBA students Ms Samiha Isbath, Ms Varalakshmi, Mr Yeshwanth Reddy and Mr Miruthanjaya of II year MBA were involved in the data collection and also in the analysis. The data analysis is done under the supervision of Dr.D.Malmarugan, Associate Professor, MBA Department and the report was prepared under the guidance of Prof. Sharmila K. P

OBJECTIVES:

1. To improve socio-economic conditions, create livelihood opportunities and increase food security & well-being of the poorest of the poor.
 2. To take a survey by visiting each house to gather information.
 3. To ensure effective participation of the villagers for the holistic development of the village.
- The number of educated members in the family: 56% of the respondents who are educated are children, 19 % are father and child. The whole family is educated only in 9% of the cases.16% are not educated. This gives us insights into their educational backwardness

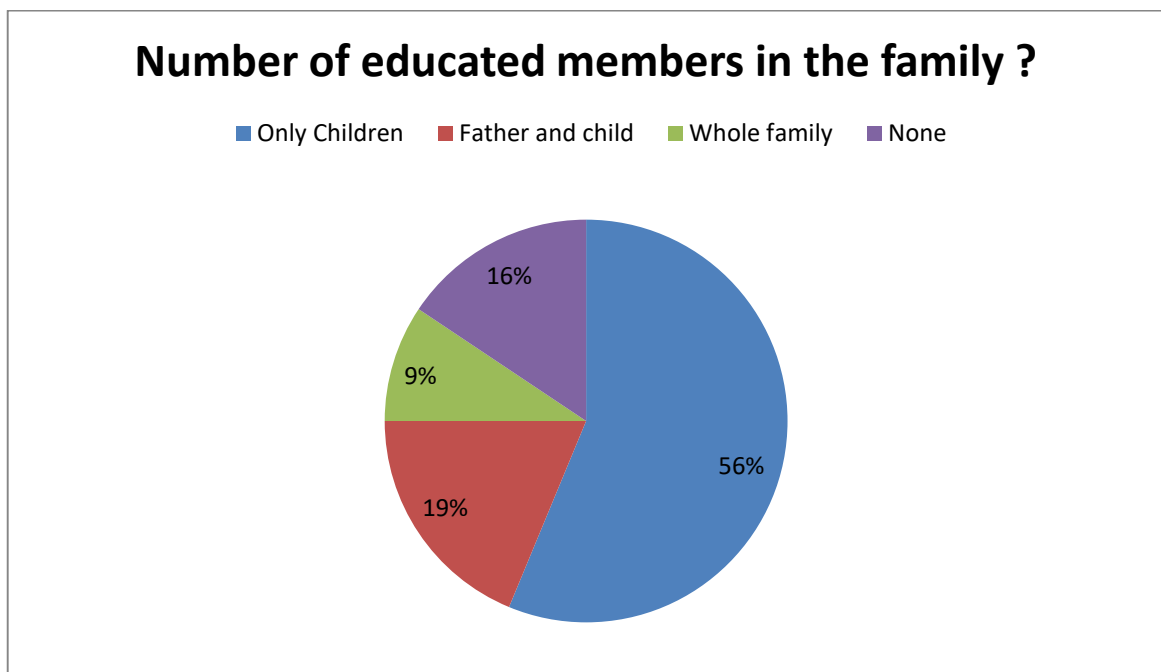


Figure I Number of Educated Members in Family

- Just one child of 41% of the respondents is alone going to school. Between 1 and 2 children, 34% of the respondents are attending school. No children of 17% of the respondents are attending school.

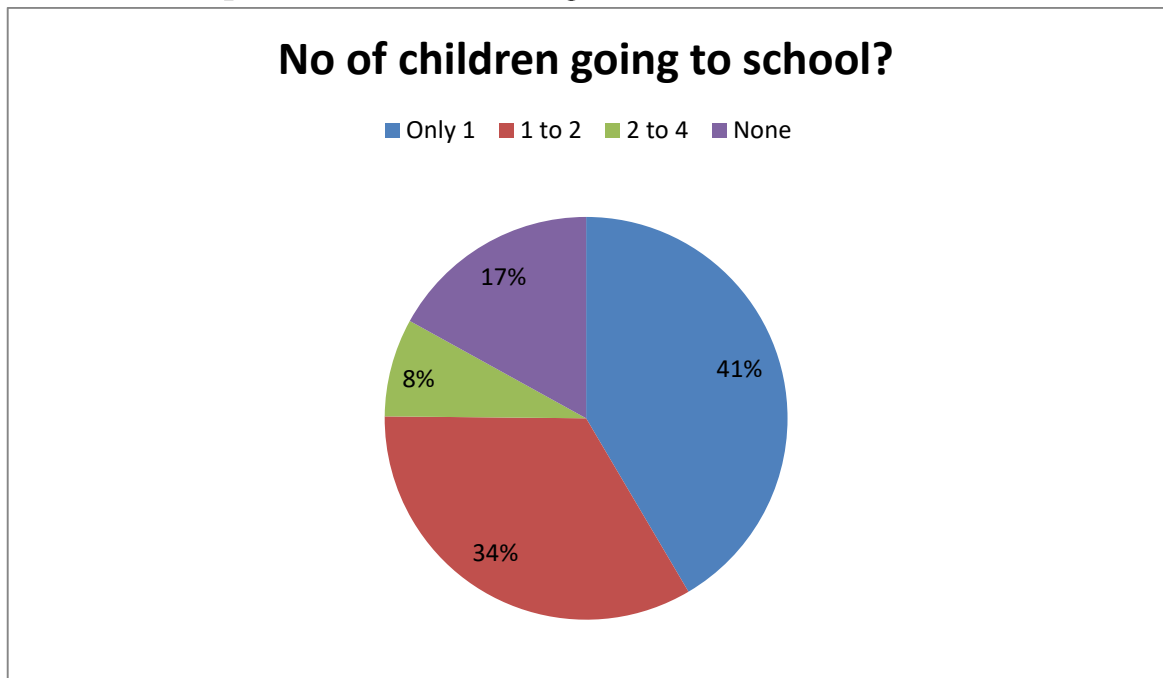


Figure II Number of Children Going to School

- As far as Occupation is concerned, it is predominantly agriculture oriented. 56% of the respondents are working in Agriculture related work. 29% are occupied in Private company jobs. Just 4 % are in Government jobs. This is result of the educational backwardness.

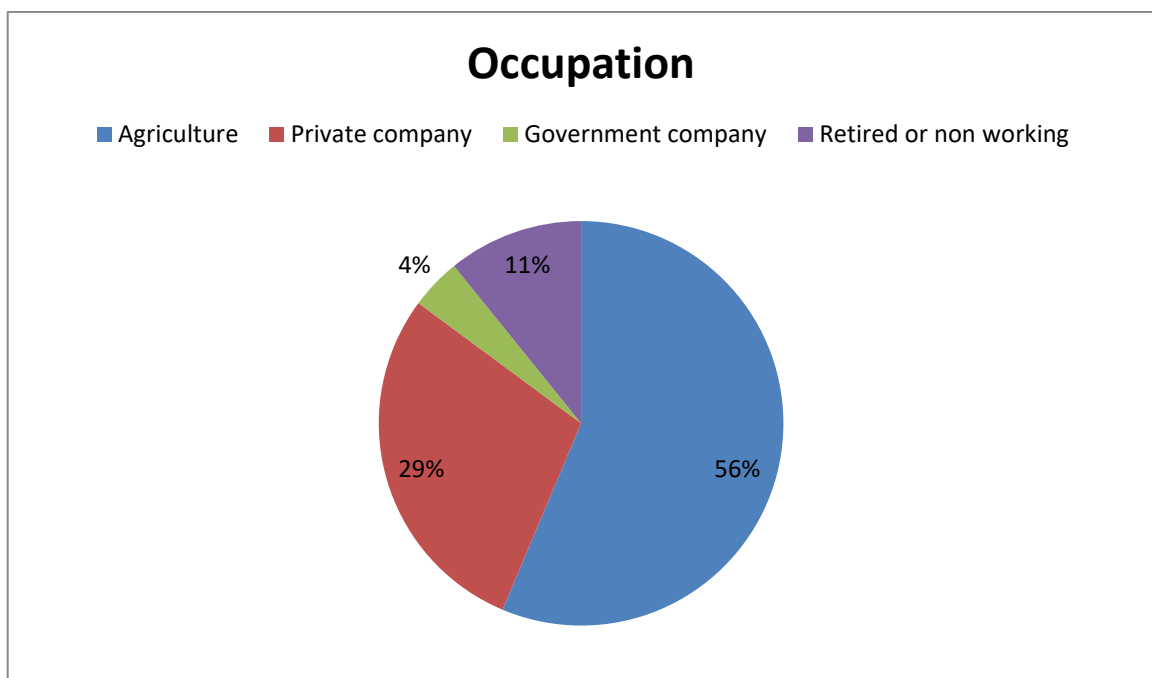


Figure III Occupation

- 59% of the population are Males and 41% are females. Gender ration is skewed towards Males than the national average.

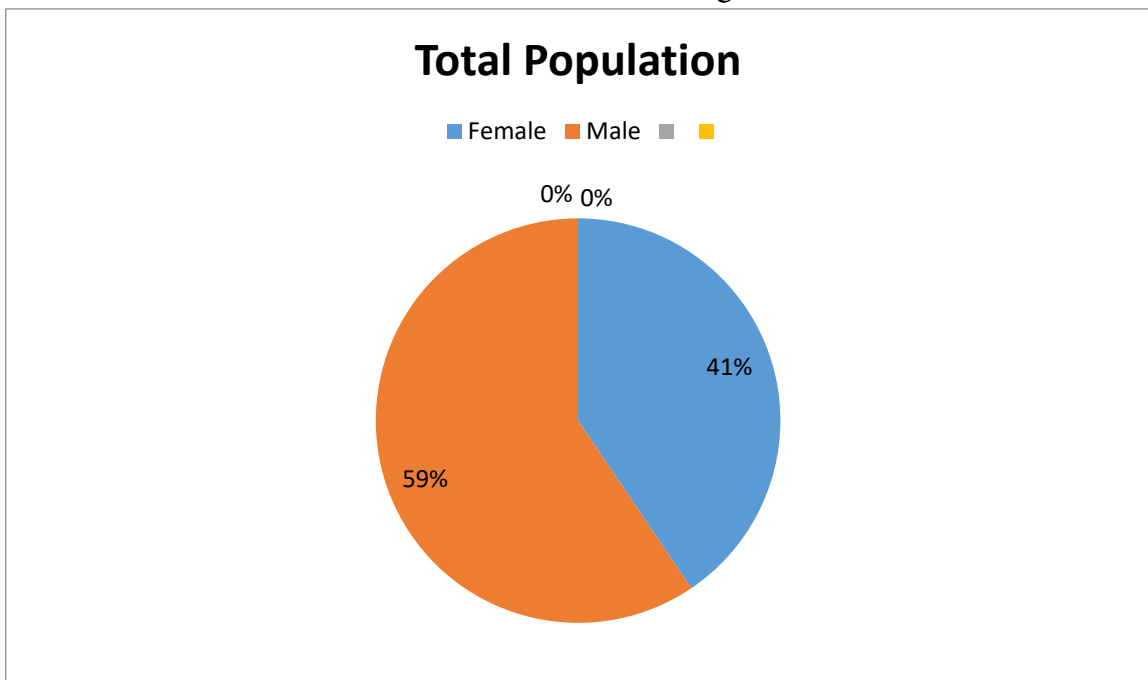


Figure IV Population Breakup

- The Monthly salary is less than Rs 10000 for about 35% of the Households. Another 35% Households have Monthly income between Rs 10000-20000 per month. 15% have Salary between Rs 15000-20000 and another 15% have above Rs 20000. Due to the educational backwardness salary earning capacity is less. This can be improved by training the villagers in vocational skill development programs as per the central and state government schemes.

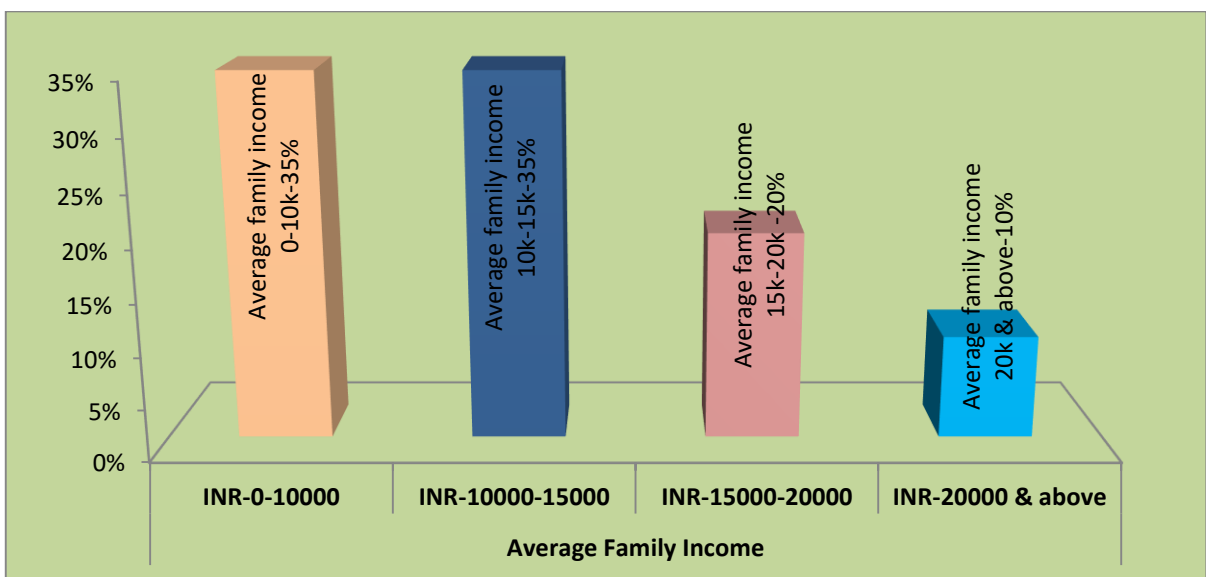


Figure V Average Family Income

- The Availability of Toilets is for 90% of the Households .But to achieve the Hygienic Conditions, Toilets to be constructed for All the Households. The mission of open defecation free villages can be achieved by the construction of toilets for households with no toilet facility.

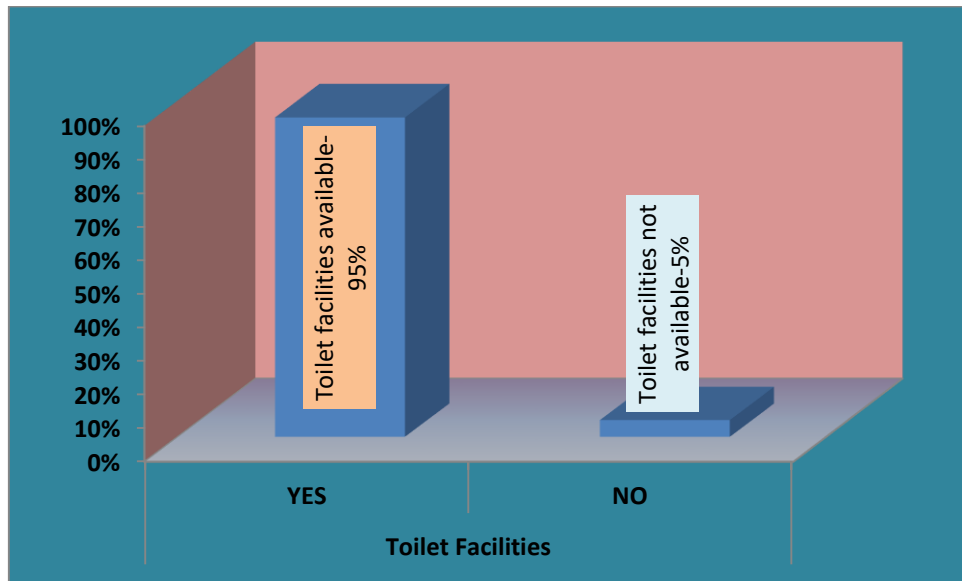


Figure VI Toilet Facilities

- The Health care Facilities are provided by the Local Primary Health Centre for 70% of the Households. 25% of the Households donnot have access to Healthcare Facilities. The medical access is far off for the complicated illnesses.

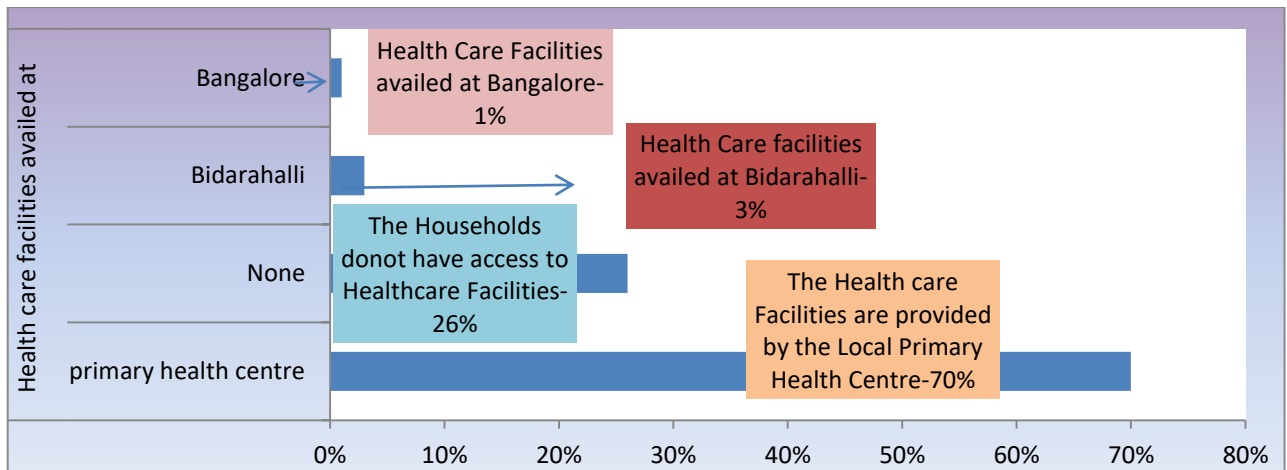


Figure VII Healthcare Facilities Aailed area-wise

- 70% of the Household don't have a graduate in their Families. 10 % of the households have one graduate only.15% of the Households have two graduates with them. Lack of Awareness about the schemes available from and central and state governments for the development of the weaker sections including educationally backward section of the society.

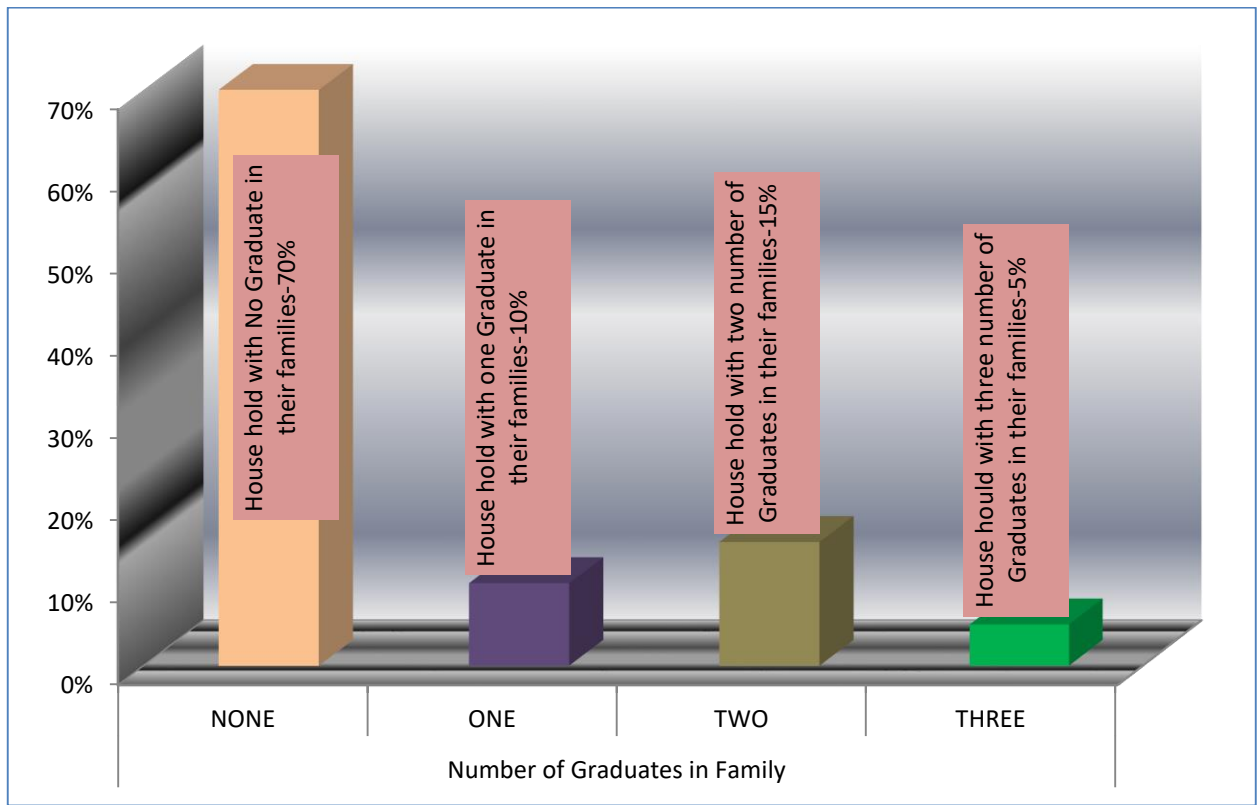


Figure VIII Number of Graduates in Family

- 62% of the house holds in the village are having at least one cattle in the house. So animal droppings can be used for the generation of the Gobar Gas which is an alternate source for cooking.

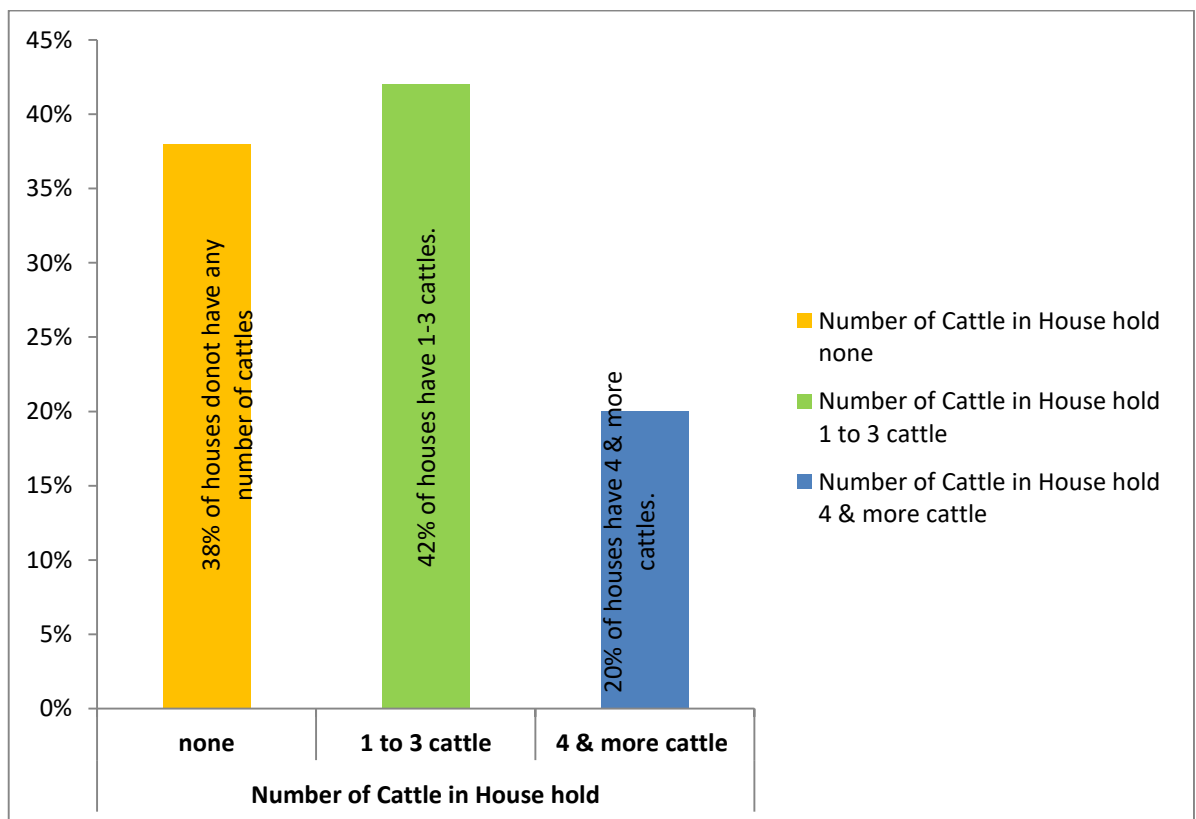


Figure IX Number of Cattle in Household

CONCLUSION:

1. Educational backwardness is the reason for lack of development, so the welfare schemes should focus on Job oriented vocational skill development.
2. Health and Hygiene are critical and the Households don't have access to Healthcare Facilities so Free Health Care Services through medical camps can be arranged.
3. To improve the general health hygiene waste management schemes can be implemented for the generation of alternate sources of energy.
4. For a hygienic atmosphere public toilets should be made easily available.
5. The main Occupation is agriculture oriented so have to come up with the schemes that support farmers, Rainwater harvesting to improve the ground water level and irrigation practices. Better farming practices using latest technology will help the farmers.
6. The basic information of emergency numbers and other services like bus timing can be provided in Kannada so that they can easily understand and follow and giving a provision to improve the day to day way of living.
7. Health of the villagers is affected by the Mosquitoes. By controlling the mosquitoes, health conditions can be improved.
8. Alternate source of fuel like Gobar gas can be generated and used by the villagers as majority are having cattle at home.
9. Improving Lighting conditions in public areas especially after sunset will help the villagers to avoid night time crimes as well as increasing the commercial activity after dark.

FREE MEDICAL CAMP

Date: 9th February 2019

A Free Medical Camp was conducted at Marasandra Village, Bangalore on 09.02.2019, by the Department of Information Science and Engineering in association with External Examination and Competition Cell, CMR Institute of Technology Bangalore. The camp was supported by 2 doctors and 2 staff members from Suraksha Multi Speciality Hospital, Varathur.

The invitation for the event is enclosed in Appendix – A.





The camp started at 10.00 a.m. and ended at 1.00 p.m. Attendees were registered at a registration desk where their details, along with their weight were taken down.



Then they were directed to Dr. N.Sekhar, for a general health check-up, where the required blood pressure of the patients was also done.



Patients who were prescribed some basic medicines that were made available by the CMR Institute of Technology at the free medical camp. And also a free dosage was given for up to 5 days.



Next, they were directed to Dr. Dr.Nimai Chandra for a free diabetes check-up, where the cases in need were given free medicines



The medicines provided by the CMR Institute of Technology hospital free of cost were Paracetamol, Gelusil, Avil, B-Complex vitamin and Calcium supplement, Septran, Diclofenac and Mebex.





Around 70 people of Marasandra Village were benefited through this free medical camp. Refreshments like buttermilk, rasna and biscuits were provided to the patients and the doctors.





Free General Medical Checkup organized by ISE Dept. and EE & C Cell of CMRIT at Marasandra Village, Bangalore on 9.2.2019, Saturday



Free Blood Pressure and Diabetes Checkup organized by ISE Dept. and EE & C Cell of CMRIT at Marasandra Village, Bangalore on 9.2.2019, Saturday



This Free Medical Camp was coordinated by Prof. Sharmila.K.P., Coordinator, External Examination & Competition Cell, CMR Institute of Technology. Dr.R.Chinnaiyan, Associate Professor, Department of Information Science and Engineering, CMR Institute of Technology organized this Free Medical Camp.



Dr. Farida Begam, Head, Department of Information Science and Engineering, CMR Institute of Technology systematized the entire happenings of this medical camp.

GOVERNMENT SCHEMES AWARENESS

SESSION

Date: 8th June 2019

With the help of MBA department of CMRIT, a report on the welfare schemes of State and Central Governments suitable for the Villagers in Marasandra was submitted by Dr. Malmarugan. Based on the report a Flyer on the welfare schemes, was prepared and distributed to the Villagers in Marasandra .The student volunteers who participated for the survey distributed the flyers to Villagers in Marasandra. About 100 Villagers from various walks of life and different parts of the village were given the flyers and explained about the welfare schemes which are mentioned below:





- Welfare Schemes
 - » Karnataka Government's Education Welfare Schemes
 - » Women and Child Welfare Initiatives by Karnataka Government
 - » Labour Welfare by Karnataka Government
 - » Health and Family Welfare Initiatives by Karnataka Government
 - » Welfare of the Disabled Population by Karnataka Government
 - » The scheme for educating girl students
- Housing Schemes
 - » Pradhan Mantri Awas Yojana
 - » Rajiv Gandhi Rural Housing Corporation Limited

TOILET CONSTRUCTION AND HIGH MAST LIGHT INSTALLATION

Reconnaissance Survey Date: 11th December 2018

As instructed faculty of CMR institute of Technology led a team of students to conduct a reconnaissance survey for the construction of toilets and renovation of the school. The team consisted of Mr. Ruchir A J, Mr. Narendra Kumar Assistant professor CMR institute of technology, Mr. Kaushish, Mr. Thejus, Mr. Adarsh Vijay, Mr. Mithun and Ms. Mahitha student volunteers of NSS. A total of 7 houses were reported to be in need of toilet of which only 5 were available and 2 were not found. Out the 4 houses 1 house is adjacent to temple and it is difficult to construct the toilet due to non-availability of space. Also area for 2 toilets in the school and 2 toilets for public use were identified. Therefore, a total of 8 toilets needs to be constructed. As far as renovation of anganavadi building is concerned, a new building is being constructed by panchayat and hence villagers requested for drinking water facility for which the estimation has been attached for sump construction.

For the high mast light which was requested by villagers two vendors have been contacted and connected with the villagers. They visited the village on 15-12-2018 and submitted the quotation by 18-12-2018 for its construction after looking into site conditions.

Note: The cost estimated were for the present rates of the time and there may have been variation of 10- 15% depending on the market fluctuation and labour availability.

As per the request of villagers and the survey conducted by the students the high mast light was constructed in the village centre. The MP funds allocated for village adoption covered the cost of complete installation of the high mast light. Due to its nature, the light covers a very large area including the nearby cross roads. The bus stop now can be used conveniently and easily accessed even after sundown, as previously the area was entirely dark.

Before the village folk would not step outside their homes after sundown, but now the light has enabled night time socializing and commercialization as well.



During the survey that was conducted, the villagers informed that many houses lacked basic toilet and sanitation facilities. The importance of hygienic toilets lies in an effort to prevent diseases which is transmitted through human waste, which can afflict the villagers.

Thus, based on the survey conducted it is understood that the villagers required easily accessible toilets to ensure cleanliness and improve hygiene standards of the village. The identified sites for public toilets during the survey, now have newly constructed toilets that utilized the MP fund which was allocated for construction and are readily available for public use. Now all the villagers can use the facility provided and remain healthy.



Toilet Constructed under Regional Development MP Funding estimated

Rs.5 Lakhs.

TECHNICAL PROJECTS

Based on the conclusions drawn from the village profiling the key areas of development are as follows:

- Since the main occupation is agriculture oriented technical developments in these areas need to be explored that support farmers, such as rainwater harvesting to improve the water levels.
- Better farming practices using latest technology will help improve the crop yield.
- A system that allows for easy access for basic information such as emergency numbers and other services like bus timing can be provided in Kannada so that they can easily understand and follow and giving a provision to improve the day to day way of living.
- Health of the villagers is affected by the Mosquitoes. By controlling the mosquitoes, health conditions can be improved.
- Alternate source of fuel like Gobar gas can be generated and used by the villagers as majority are having cattle at home.
- Due to poor lighting in the public areas of the village, sustainable technologies can be explored to improve the public areas.

Based on the above mentioned points, CMRIT Students and Faculty of all the departments came together to come up with various innovative technical projects. A total of 9 projects were finally shortlisted among many proposals.

The Projects are listed below:

1. Solar Tree @ Marsandra
2. FarmerMate App
3. Pedal operated Flour Mill
4. Low cost Portable Biogas Plant
5. Rainwater Harvester

6. Mosquito Repeller
7. Drip Irrigation System
8. Marsandra Mobile App (English & Kannada)
9. Anganwadi Management System

These projects were conducted in 3 stages:

- Surveying Phase
- Deployment Phase
- Feedback Session with the villagers

SURVEYING PHASE:

The faculty of CMR institute of technology led a team of students to conduct a reconnaissance survey at Marsandra Village. As per the instructions from the Marasandra Village Chairman, the Panchayat member Mr. Dodda Pillappa of the village guided the gathering. He helped the teams to find ideal location for installing their projects. We also interacted with school teachers. They briefed us about the current situation of the village. The process of surveying included field visit choosing the area of project set up and deployment, assessing the requirements and feasibility, interacting with the villagers for their opinions and input which varied from project to project.

DEPLOYMENT PHASE:

Students of CMRIT came together and prepared innovative projects for the adopted village Marsandra to improve the living conditions of the villagers residing there. After a year of hard work and effort of building and creating working models of the projects, all the student teams went for the final site visit for the deployment and implementation of the innovative projects. All the necessary equipment was packed to be deployed at the selected sites in Marsandra. Respective teams set up the equipment for implementation at the

sites. After successful deployment and implementation of the projects, the students explained the working process to the villagers who are expected to use them in the future. The villagers were very happy and satisfied with the outcome of the entire process and the hard work of each individual involved had finally paid off in a planned and successful manner.

FEEDBACK SESSION WITH VILLAGERS:

The main agenda for the session was to take feedback of the projects installed in Marsandra. After arriving at the respective sites, students interacted with the villagers who are currently using the technical projects and also took feedback from them. The villagers were delighted with the projects installed and found them really useful. They explained how the projects are helping them to make their work more efficient, easier and also gave some essential suggestions. The village chairperson also visited the project sites and was glad to see the projects installed for the development of the village.

PROJECT I:

SOLAR TREE @ MARSANDRA

MENTOR: Prof. KASHIF AHMED

DEPARTMENT: ELECTRICAL & ELECTRONICS ENGINEERING

STUDENT LEADER: SAKET VAIBHAV (1CR16EE065)

TEAM MEMBERS:

- **D V BHUVAN (1CR16EE019)**
- **SHAKTIVEL RAJAVELU (1CR16EE072)**
- **HARSHITA KANCHAN (1CR16EE028)**
- **RIA AUGUSTINE (1CR17EE057)**
- **K DINESH RAJ (1CR17EE027)**
- **AKSHAY RAJEEV (1CR17EE004)**
- **SRISTI (1CR17EE070)**

SURVEY

FIRST SURVEY DATE: 14TH September 2019

SECOND SURVEY DATE: 21ST September 2019

This report gives a brief overview of how we located a suitable location for our Solar Tree project. On 14/09/2019 we did our first visit to the village and decided a location which was near the village centre, right next to the bus stop. However, at the end we got an information of a high mass lamp is approved and will be coming up at the same spot. Thus, we were tasked to locate a new spot for which we narrowed down to two new spots on 21/09/2019:

I. Behind the Marasandra Government School premises close to a water tank.



II. Street corner

We however finally chose the street corner that had no street lights in the vicinity and also is situated right next to a temple. This street corner is at a cross-road between a few new layouts coming up, and straight down a single road from the town centre. This was done so that the Solar Tree project can provide free and more than adequate lighting in such a way that it is found to be beneficial for the majority of the villagers.



DEPLOYMENT

Date: 3rd October 2019

MOTIVATION:

The objective of the work is to simulate, design and develop a solar tree structure to produce DC power using solar energy to supply a DC lighting load which is used for efficient and eco- friendly street lighting. The implementation of it would increase safety on roads, reduce the possibilities of night time crime, improve the security in the village and increases commercial and leisure activity after dark by providing the village with free and automatic light.

WORKING PRINCIPLE

The solar tree is designed with four branches with 3 sub branches in each branch. Every sub branch of the total 12 sub branches are provided with a solar panel of 10 W. These 12 panels are connected in parallel and provides a cumulative power of 120 W which is used to power a 12 V, 150 Ah tubular battery. The battery in turn powers four lights each of 24 W. The panels, load and battery are connected through a charge controller to avoid charge overflow to battery and also to automatically operate the load from dusk to dawn i.e., from 6pm to 6am. The tree is also provided with grounding which provides a low-resistance path to ground that will conduct the enormous electrical currents when lightning strikes occur.

APPLICATION OF THE PROJECT

- To provide automatic free light to the village
- The tree is installed near a temple so it's useful to more villagers
- To handle the enormous currents during lightning strikes
- The tree is installed where there was no light before
- They require less maintenance than conventional street lights









The 'Solar Tree Project' at Marasandra mainly aimed at solving the problem of lighting by using the most abundantly available resource - the sunlight. We could accomplish our goal by a well-planned use of components that suited the needs of our project. The various components that were used by us in the project are as follows

1. Solar Panels
2. LED Street Lamps
3. Solar Charge Controller
4. Battery

FEEDBACK:

The project of the solar tree is aimed at increasing safety on roads, reducing possibilities of night time crime, improving the security in the village and increasing commercial and leisure activity after dark by providing the village with free and automatic light.

Initially the intersection point looked something like this.

Which the villagers claimed to be very risky for passing through the intersection during night time. Since it also houses a temple at the corner which is even more beneficial to the devotees aimed at going to the temple late in the evenings.

The area selected for the installation of the tree was near the residential area and next to the temple which is frequently visited by the villagers and also, the tree is installed at a junction which enables the light to cover more area of the road.

The villagers are thankful for the lights that they've gotten. They now enjoy the pleasures of free light. They appreciate that the lights require no maintenance and are free of cost to them. The villagers have appreciated the hard work the team has put in deploying the solar tree. They are thankful for the management of CMRIT for contributing to a much needed and highly useful project for them. Now that the solar tree has been installed, the villagers can freely move and carry out businesses even after it gets dark. The villagers said they now feel safer than before.

PROJECT II:
FARMER-MATE ANDROID APPLICATION

MENTOR: Prof. RAVEESH HEGDE

DEPARTMENT: TELECOMMUNICATION ENGINEERING

STUDENT LEADER: CHARAN TEJ P.V. (1CR16TE011)

SURVEY

Date of Survey: 8th June 2019

We visited Marasandra Village on 8th June 2019. The sole purpose of this survey camp was to make the village smart enough by implementing Innovative ideas into the village. Our project Farmer mate, which is basically an Android Application that helps out the farmers to reach the Agro-based solutions at an instant. Project 'Farmer mate' aims in reducing the difficulties faced by the farmers in knowing the right pesticide for the right crop and the amount of usage of these pesticides. 'Farmer mate' guides the farmers with instructions in one go with a user interface application. Application takes the input from the farmer in the form of an image (diseased/infected leaf), then returns the right amount and pesticide to be used for the disease infected plant as a solution to the end user.

In the village, we were able to identify the following crops namely Ginger (Shunti), Flat Beans (Chappada Avrekai), Finger Millet (Ragi), Maize (Jola) and Mango Tree.



The Disease identified in the above Maize crop was Adjuvant Burn, Urea burn or other foliarly applied nutrients can burn the leaf and develop the appearance of some foliar disease lesions. Leaf tearing in a pattern is one diagnostic characteristic of the nutrient burn as opposed to disease.



Adjuvant burn can appear similar to some plant diseases, particularly grey leaf spot and northern corn leaf blight. Applying some products over the top of corn during the hottest part of the day can tend to increase the likelihood of a burn on the

leaf. Adjuvant burn will tend to start in the top of the plant whereas most of the diseases we deal with, particularly those in situations where corn has been cropped continuously in a particular field, will start lower in the canopy and move up the plant.

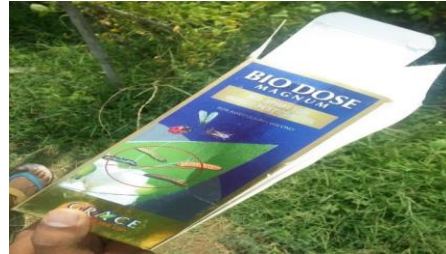


The next crop that we were able to identify was Flat Beans which was locally called as 'Chappada Avrekai'. We noted that Flat Beans was the most and often cultivated crop in the village. Fig.5 shows the Flat Beans that was identified in Marasandra Village.



The Disease identified in Flat Beans was Bacterial Brown Spot. It was found that Bacterial spot can be a devastating disease when the weather is warm and humid. The disease can affect all above-ground parts of tomato and pepper plants: stems, petioles, leaves, and fruits. Fruit spots commonly result in unmarketable fruit, not only for fresh market but also for processing because the spots make the fruit difficult to peel.

Seedcorn Maggots and other Beetles were also one of the causes for this. The Farmers used Bio Dose Magnum which is a Bio-Spray for insect pest control in order to prevent the disease that affects the Flat Beans. But this did not considerably reduce their problem or issue on the disease of the crop.



The other issue that we came across was the European Corn Borer (ECB) feeding on the inside of the pod. This was caused by the beetles laying their eggs on the pod which eventually turns in ECB and penetrates itself in to pod for feeding purpose. Fig.8 shows the European Corn Borer (ECB) feeding on a pod.



These are the major issues that the farmers are facing during the cultivation of Flat Beans.

We were also able to identify the Rose Flower Field, Ginger (Shunti) and Finger Millet locally known as Ragi, wherein the farmers had no issues or problems regarding the pest.



Later, we were able to identify the Mango trees. Most of the mango trees were infected with disease. Fig.10 shows the different infections of Mango tree.



This Disease is found to be Powdery Mildew which is caused by the organism *Oidium Mangiferae*. Infected panicles (flowers, flower stalks, and young fruits) become coated with the whitish powdery growth of the pathogen (photo, right). Infected flowers and fruits eventually turn brown and dry. Mango cultivars vary in susceptibility to powdery mildew. The use of less susceptible cultivars is the best control measure for this disease. For the very susceptible cultivars, most of the flowers, very young fruits, and young leaves can become severely diseased.

Chemical Control Methods:

This is the best and more effective management strategy for controlling the disease. The following fungicides are recommended for use in prevention and eradication of powdery mildew disease of mango;

- Absolute 375SC 10ml/20l
- Jupiter 125SC 15ml/20l
- Chariot 500SC 20ml/20l
- Exempo Curve 250SC 15ml/20l
- Ransom 600WP 15g/20l
- Explorer 3 S L 10ml/20l
- Megaprode Lock 525WP 30g/20l
- Milestone 250SC 10ml/20l
- Tomahawk 250EC 10ml/20l

Non- Chemical Control Methods:

The following practices help in reducing the fungus inoculums, prevent the spread of the disease and provide a condition that does not favor the development of the disease.

- Regular pruning of infected inflorescences at an early stage.
- Removal of fallen leaves, inflorescences, and malformed fruits from the tree base
- Use of tolerant/resistant varieties
- Proper weed control
- Minimizing field movements from infected areas to non-infected zones
- Ensuring proper spacing of the trees

Note:

- Whenever spraying, it is advisable to mix the fungicide with INTEGRA 3ml/20l, which improves the efficacy of the fungicide by acting as a sticker, spreader, and penetrate.
- Timely control of the disease helps reduce/prevent losses attributed to its infection.
- Alternating different fungicides throughout a plant's season prevents the fungus from developing resistance over any of the fungicides.
- Fungicides should be reapplied after 1-2weeks.
- A proper nutrition builds/boosts the plants' immunity against infections.

This Disease is found to be Anthracnose which is caused by the organism

Colletotrichum gloeosporioides. By providing plants and trees with well drained and enriched soil, nutrient-rich fertilizer, sufficient water, and annual pruning, this will help them maintain a vigorous defense system and enable them to resist diseases more handily. Anthracnose infection. Black spots appear on both young and old leaves, bloom, and fruit. On the leaves, the black spots go all the way through the tissue. On young leaves, the black spots appear along the margins causing leaf curl and leaf drop. The disease causes flowers to drop. After



the flowers have fallen, the bare bloom spikes have a darkened, dirty appearance. Young fruit will become deformed and split, eventually dropping.

Applications of copper fungicides as new tissue develops and protecting the expanding tissue will prevent anthracnose infections. For infections that come following nutritional deficiencies or wounds, prevention is the only successful control. Prevention involves spraying weekly from the first appearance of the flowers until all fruit have set with copper fungicide sprays (always follow label directions). To prevent fruit infections, sprays must be applied from the time the fruit sets until mid-May to mid-June depending on variety.

We were also able to identify the Drumstick tree. Fig. shows the Drumstick tree leaves.



The above crops are majorly cultivated in Marasandra village. In order for the farmers to get instant solutions on the infected leaves or plants, implementation of Farmer mate Android Application will be made available to the villagers soon. The project 'Farmer mate' offers a solution to two issues plaguing the agriculture – decrease in the yields and usage of improper pesticides: the user interface application will provide the farmer with all the correlated information about the infected or diseased leaf with necessary pros and cons. The information includes the right pesticide to be used, amount of pesticide to be used, cause of the pest and relevant schedule for the use of pesticides.

The main objective is to save agriculture and to make progressive yielding rates with smart farmers.



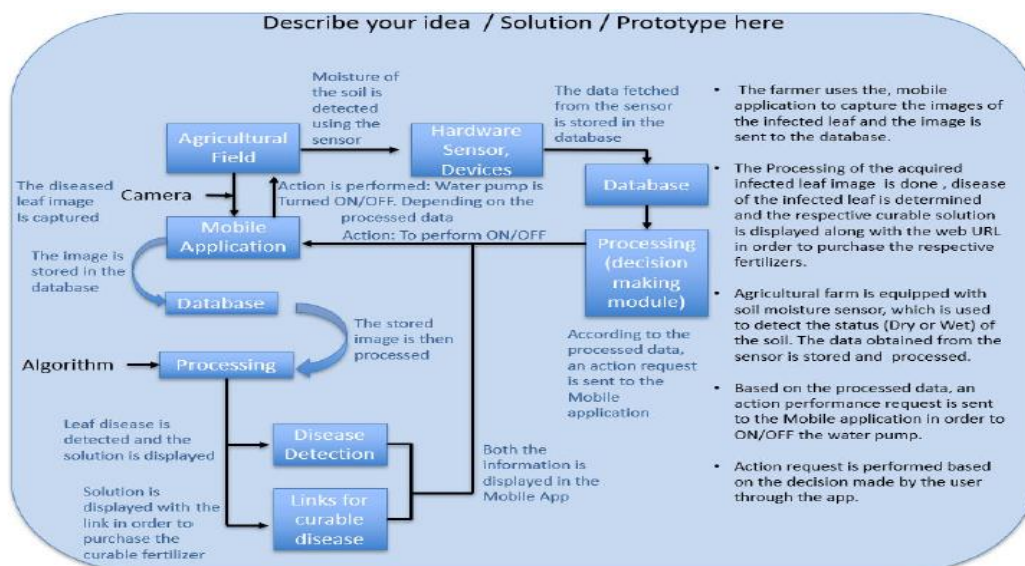
DEPLOYMENT

DATE OF DEPLOYMENT: 24th August 2019

MOTIVATION:

In the village, we were able to identify the following crops namely Ginger (Shunti), Flat Beans (Chappada Avrekai), Finger Millet (Ragi), Maize (Jola) and Mango Tree. The Disease identified in the Maize crop was Adjuvant Burn, Urea burn or other foliarly applied nutrients can burn the leaf and develop the appearance of some foliar disease lesions. Leaf tearing in a pattern is one diagnostic characteristic of the nutrient burn as opposed to disease. Our project Farmermate, which is basically an Android Application that helps out the farmers to reach the Agro-based solutions at an instant. Project 'Farmermate' aims in reducing the difficulties faced by the farmers in knowing the right pesticide for the right crop and the amount of usage of these pesticides. 'Farmermate' guides the farmers with instructions in one go with a user interface application. Application takes the input from the farmer in the form of an image (diseased/infected leaf), then returns the right amount and pesticide to be used for the disease infected plant as a solution to the end user.

DESIGN & WORKING PRINCIPLE WITH BLOCK DIAGRAM/ALGORITHM



- Let's consider the farmer who is on the field, he detects the infected leaf in the farm.
- He captures the infected leaf and then uploads the image into the Android Application.
- The Android Application then process the captured image in Matlab.
- After the processing, the solution for the infected image leaf is displayed on the Android Application with the web URL in order to purchase the curable fertilizers.
- The solution for each and every crop is stored in the data base.
- We are using object detection algorithm using features in Image Processing.

In order for the farmers to get instant solutions on the infected leaves or plants, implementation of Farmermate Android Application is made available to the villagers. The project 'Farmermate' offers a solution to two issues plaguing the agriculture – decrease in the yields and usage of improper pesticides. The user interface application will provide the farmer with all the correlated information about the infected or diseased leaf with necessary pros and cons. The information includes the right pesticide to be used, amount of pesticide to be used, cause of the pest and relevant schedule for the use of pesticides. The main objective is to save agriculture and to make progressive yielding rates with smart farmers.





User Interface of the Application:

HOME:





4G 3:50

FARMERMATE

NO IMAGE
SELECTED

CHOOSE IMAGE

UPLOAD IMAGE



4G 3:50



CHOOSE IMAGE

UPLOAD IMAGE



4G 3:50



CHOOSE IMAGE

UPLOAD IMAGE

READ SOLUTION

FEEDBACK:

- The farmers are very happy with the app as they get instant results on the infected leaves by just taking a picture.
- This app makes it convenient for the smart farmers as they get detailed information on the affected plant and its disease along with remedies.
- The suggestion provided was that the app can be upgraded to give information in Kannada as they don't know English.
- Since the app requires internet facility, they want the app to be installed in a common area like the anganwadi where internet facility will be available

**PROJECT III:
PEDAL OPERATED FLOUR MILL**

MENTOR: Prof.VINAY M N

DEPARTMENT: MECHANICAL ENGINEERING

STUDENT LEADER: SYED ABDULLA (1CR16ME080)

TEAM MEMBERS:

- **GOPIKRISHNA G (1CR17ME405)**
- **V SHANKER ADARSH (1CR16ME084)**

SURVEY

DATE: 8th June 2019

Some of the Recognized Places for Setting up The Pilot Based Projects-

Pedal Based Flour Mill for Soft Grains Using Set of Complex Gears and Power Generator. As seen in the below pictures some of the key places have been identified to set up the social development projects and some of the land measurements have been taken so as to install various equipment and setting up the project and further details of the projects establishment will be taking in upcoming days after completion of external exams.



Over here this place has been identified tentatively for setting up pedal based flour mill as it is a central circle of the village and most of the gathering takes place here.

DEPLOYMENT

DATE OF DEPLOYMENT: 24th August 2019

MOTIVATION:

India is the second most populous country in the world. With ever growing population the needs of people are increasing rapidly. The demand for electricity is very high and even today many households in rural India don't have electricity. People in villages mainly use bicycle as their means of transport for smaller distances, in such places our project is of great use. Humans are able to generate considerable amount of power while bicycling and this power can be utilized in a productive way.

Initially, the site chosen for the deployment of the flour mill was opposite to the main bus stop, however later we deployed it inside the anganwadi due to security concerns.

DESIGN:

- The main objective is to design & develop a machine which uses human power as source of energy to drive the machine. It basically consists of a simple bicycle mechanism.
- Pedal power is the transfer of energy from a human source through the use of a foot pedal and crank system.
- Since the thigh or quadriceps is largest and most powerful muscles in the human body which can be utilized for generating as much as energy from human body and this human energy can be used as source of mechanical energy for driving the flour mill.
- The proposed machine consists of three sub systems:
 - 1) The energy unit
 - 2) Transmission mechanism
 - 3) The process unit

- The energy unit basically consist of conventional bicycle mechanism;
- The transmission mechanism consist of chain drive running over a pair of sprockets and chain drive running over a free wheel
- The process unit is a pair of stone wheels mounted over one other where the grains gets crushed into powder form.

WORKING PRINCIPLE

A person can generate four times more power by pedaling than by hand-cranking .If a person pedals with his full capacity then continuous pedaling can be done for only short period of about 10min. However pedaling at half power can be sustain for around 60min. Pedal power enable a person to drive device at same rate as that achieved by hand-cranking but with far less effort & fatigue. So, in this work we use pedaling mechanism to generate the power and run process unit.

Any grain fed into the hopper is fed directly to the mill while pedaling with the help of small attachment provided. Fine flour or broken grains can be obtained by adjusting the lever provided in the mill.

Human beings are very adaptable and can produce power over a wide range of pedaling speeds. However, people can produce more power--or the same amount of power for a longer time--if they pedal at a certain rate. This rate varies from person to person depending on their physical condition, but for each individual there is a pedaling speed somewhere between straining and flailing that is the most comfortable, and the most efficient in terms of power production.

Pedal operated flourmill unit, which besides being used as a flour mill can also be used as cycle exerciser. It serves dual purpose of fine flour mill and helps the

person pedaling to maintain physical fitness through exercise. Flourmill can be pedaled or cranked by hand or foot.





APPLICATION:

- The pedal based flour mill has been executed successfully and it is functioning smoothly without any problems in its operation and running of the flour mill.
- The pedal based flour mill can be modified by attaching a wet grinder by using bevel gears.
- And other modification is that by connecting a generator to the shaft of the free wheel and storing that power in a battery and that can be used to light a bulb.

FEEDBACK:

- Because of frequent power cuts it was quite difficult to grind the grains, now using the pedal flour mill we are not dependent on the power.
- It is a free of cost maintenance human powered machine.
- It as a form of exercise for us and in return we get the powdered semolina which we cook it in our houses.
- It saves us the money, instead of or rather than going to a flour mill shop and paying them.

PROJECT IV:
LOW COST PORTABLE BIOGAS PLANT

MENTOR: Prof. NARENDRA KUMAR FATEHPURIA

DEPARTMENT: CIVIL ENGINEERING

STUDENT LEADER: THEJUS L (1CR16CV068)

TEAM MEMBERS:

- C J VAJRA (1CR16TE004)
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- VRUNDA (1CR16CV074)

SURVEY

Date: 8th June 2019

The first visit to Marasandra village was organized on 08/06/2019(Saturday), in order to locate a place to set up a biogas plant.

Some pictures of the village were taken in the process to find an apt place for the same-





FIXING A LOCATION

HOME-1

This was one of the homes shortlisted amongst others as the number of cows were more, so good amount of cow-dung can be obtained, thus making the project beneficial for the residents.

NUMBER OF RESIDENTS: 4

NUMBER OF COWS: 4



HOME-2

This was one more home which shortlisted as the number of cows were high so good amount of cow-dung can be obtained, thus making the project beneficial for the residents.

NUMBER OF
RESIDENTS: 4

NUMBER OF COWS: 3



HOME-3

This was one more home which shortlisted as the number of cows were sufficient as there were less no. of residents, thus making the project beneficial for the residents.

NUMBER OF
RESIDENTS: 2

NUMBER OF COWS: 2



DEPLOYMENT

DATE: 24th August 2019

MOTIVATION:

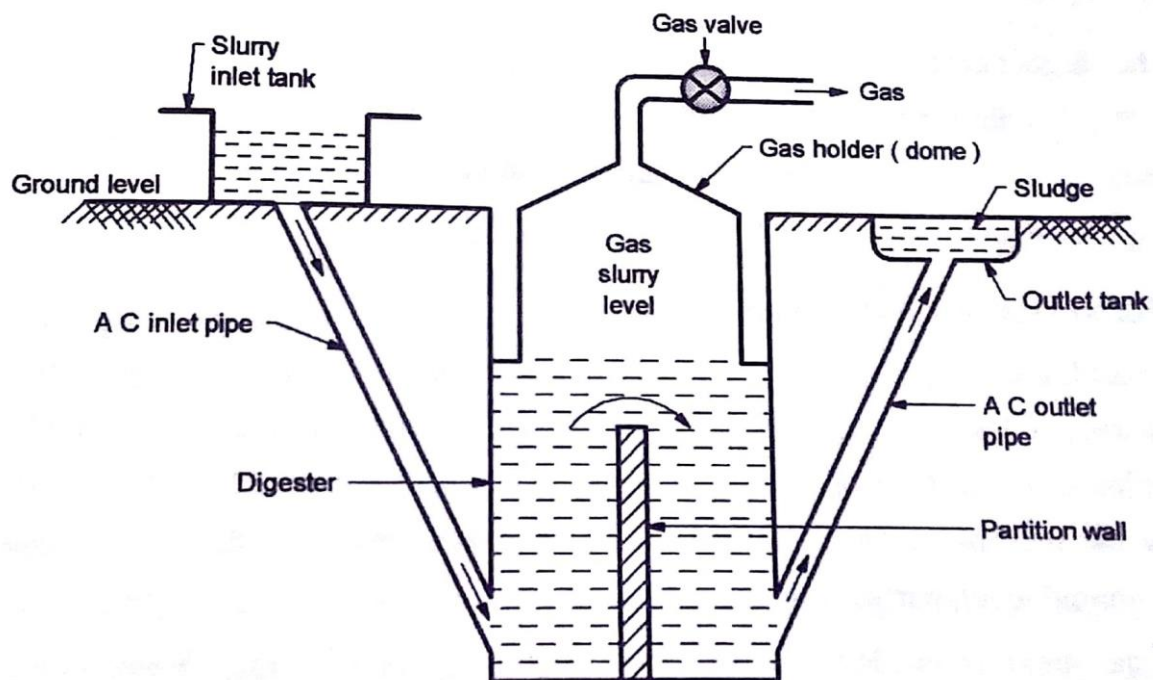
1. Waste generated from kitchen household and cow dung can be utilized for biogas and power generation effectively in such a very low cost without using electricity and no major running cost of the project.
2. **Biogas generation** is totally renewable and sustainable source of energy while generating biogas; it is an effective and clean source of energy- best replacement of fossil fuel based emissions because it creates lots of pollution in air and that too in very limited in quantity.
3. **Rural application:** They need a technology which is feasible and useful for their daily problem in which waste is the major concern.
4. **Economical and sustainable** in terms of uses and environment.
5. **Natural fertilizer and compost:** As a byproduct, they are getting natural manure which can be used directly as soil fertilizer and organic manure for their farm crops.

DESIGN WITH THE BLOCK DIAGRAM

A significant technology called “Khadi & Village Industries Commissions” (KVIC) based model to manage & generate energy from organic food waste & waste water. KVIC technology is a portable & ready to use “Biogas Plant” which offer the utilization of biogas produced by bio-methanation process. It can be installed at waste generation site itself to get Cooking Gas and organic manure from Kitchen waste instantly. It is highly viable to implement bio-methanation plant at Hostel /Institute level to treat kitchen waste. 1cubic meter capacity biogas plant can produce 0.5kg biogas, it can use for 2-3 hours daily if it is feeded by 3kg food waste every day.

CONSTRUCTION:

A common gobar gas plant suggested by Khadi & Village Industries commission (KVIC) is described below. These are small scale gas production. It consists of slurry inlet tank, gas valve, dome, outlet tank ac inlet pipe, digester, partition wall. The plant consist of digester made of masonry construction in the form a well below the ground level and the floating gas holder also called as dome, made of mild steel.



Fiber Coating : Polyester ISO Resin, Polyester ISO Resin Gel coat, Glass fiber mat 600E, G.I pipe with Gas holder B-CLASS 3” pipe

Process : Anaerobic process

Reactor : Vertical Reactor portable made

Reactor type : Double partitioned (water sealed jacket column)

Extraction system : Flooding Type Automatic With Respect To Fresh Feed

WORKING PRINCIPLE:

The plant can treat 20Kg Cow Dung per day with a capacity of 1m³. The main part of the biogas plant is digester, which has got two chambers. One is solid waste chamber and the other is liquid waste chamber. The waste directly goes to the solid waste chamber inside the digester. In the first chamber food waste remains for 70 to 80 days, then it converted in to semi liquid form. After that it moves to the second chamber where it remains for 20 to 25days. Then it purely converted in to slightly viscous blackish liquid which automatically pumps out from the slurry pipe.

From the above, in the inlet tank animal waste slurry is prepared containing cow dung and waste in the ratio as 1:1 to 1:1.25 the feeding of animal waste slurry is usually done once in a day. The sludge comes out with the built up of gas pressure in the dome above the partition wall & flows out to the outlet tank through A C outlet pipe. This sludge is an excellent fertilizer which can be again fed to the soil. At the top of the gas holder, the accumulated gas is drawn from the pipe through gas valve.

The bifurcation of digestion chamber through partition wall provides optimum conditions for growth of acid formers & methane forms as the PH value requirement for these bacteria is different. Therefore, this gives a good yield of biogas. It operates naturally under constant pressure. The diameter of the digester of a gas plant ranges from 1.2 to 6m. & its height varies from 3m to 6m.

The mild steel gas holders are prone to corrosion thus needs painting at regular intervals. This problem can be overcome by using fibre glass reinforced plastic (FRP) material for construction of gas holders. However it is costly.

Most organic materials undergo a natural anaerobic digestion in the presence of moisture and absence of oxygen and produce biogas. The biogas so obtained is a mixture of methane (CH₄): 55-65% and Carbon dioxide (CO₂): 30-40%. The biogas contains traces of H₂, H₂S and N₂. The calorific value of biogas ranges from 5000 to 5500 Kcal/Kg (18.8 to 26.4 MJ /m³). The biogas can be upgraded to synthetic natural gas (SNG) by removing CO₂ and H₂S.

APPLICATION:

- Villager is able to use this biogas (0.5kg) for 2.5 hours daily for cooking.
- Natural manure and slurry are using for composting and fertilization

The biogas is used for cooking, domestic lighting and heating, run I.C. Engines and generation of electricity for use in agriculture and rural industry. Family biogas plants usually of 1-3 m³ capacity.

Advantages of KVIC Model

- Robustness & Operational Reliability
- Stable under large load variations
- Tolerant to disturbances
- Recovery very quickly after major upsets
- No Clogging of reactors
- No risk of Sludge Bulking
- Excellent Strength to retain high pressure of Gas
- Expert Fabrication
- Customized Design & Fabrication, Long Life.
- Cost effective and easy maintenance







● ○ REDMI NOTE 5 PRO
MI DUAL CAMERA

The plant is a Floating-Drum KVIC Model. The plant can treat 20kg of cow dung. The most important component being the digester, comprising 2 chambers(food waste and cow dung(solid) which is converted into liquid in 70-80 days, the sludge(liquid) that stays in chamber for 20-25 days). This plant is made with Fiber-Reinforced Plastic (FRP) material which makes it recyclable and durable for longer period. It being a customized product is made according to standard dimensions of a KVIC Model. Its capacity is 1m³ and can produce 2-3 hours of gas per day for cooking purpose.

FEEDBACK:

The project is functioning great, making it an innovative solution by utilizing the waste (cow dung, food waste) for gas conversion for cooking as well as for agriculture in the form of manure.

The plant was very useful as it not only eliminated the cost of gas (LPG) but also changed their crop production rate due to the use of manure produced by the plant. The house owner was extremely satisfied as the cattle waste was being utilized efficiently and they were receiving bio gas which is useful to them for various household purposes.

PROJECT V:
RAIN WATER HARVESTING

MENTOR: Prof. VINAY M N

DEPARTMENT: MECHANICAL ENGINEERING

STUDENT LEADER: THEJUS L (1CR16CV068)

TEAM MEMBERS:

- GOPIKRISHNA G (1CR17ME405)
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- VIGNESH RAMAKRISHNAN (1CR17ME085)
- U ARVIND LAMBODHAR (1CR17ME 082)
- V VIJAY KUMAR (1CR17ME 083)

SURVEY

Date: 8th June 2019

The first visit to Marsandra village was organized on 08/06/2019(Saturday), in order to locate a place to install a rain water harvesting system. Some pictures of the village were taken in the process to find an apt place for the same.



Rain Water Harvesting Site

As per the convenience of the people of the village and for the rain water harvesting system to be yield full to the beneficiaries, we have located a place which is an anganwadi in marasandra village.

Total Building Dimension:

$$40 \times 20 = 800 \text{ sq.ft}$$

People who are benefitted:

- 30-40 children
- Teachers
- Workers & Community Members



DEPLOYMENT

Date: 24th August 2019

MOTIVATION:

In most of the villages, existing bore wells are unusable due to excessive salt and hardness of the water. The villagers are left with no choice so they are dependent on bore well water for irrigation and domestic use. Due to lack of clean drinking water villagers have to face lot of health issues. Ground water recharge alone doesn't solve the problem so other ways to get pure drinking water should be identified. Installing water purification units and rainwater harvesting storage tanks will provide clean drinking water to the villagers.

DESIGN WITH THE BLOCK DIAGRAM

Following are the components of rainwater harvesting system

- 1. Catchment area:** The catchment of a water harvesting system is the surface which directly receives the rainfall and provides water to the system. It can be a paved area like a terrace or courtyard of a building, or an unpaved area like a lawn or open ground. A roof made of reinforced cement concrete (RCC), galvanized iron or corrugated sheets can also be used for water harvesting.
- 2. Coarse mesh at the roof** to prevent the passage of debris
- 3. Conduits:** Conduits are pipelines or drains that carry rainwater from the catchment or rooftop area to the harvesting system. Conduits can be of any material like polyvinyl chloride (PVC) or galvanized iron (GI), materials that are commonly available.
- 4. First-flushing:** A first flush device is a valve that ensures that runoff from the first spell of rain is flushed out and does not enter the system. This needs to be done since the first spell of rain carries a relatively larger amount of pollutants from the air and catchment surface.
- 5. Filter:** Filter is used to remove suspended pollutants from rainwater collected over roof. A filter unit is a chamber filled with filtering media such as fiber, coarse sand and gravel layers to remove debris and dirt from water before it enters the storage tank or recharges structure. Charcoal can be added for additional filtration.



Fig: Water filter

6. **Storage facility:** There are various options available for the construction of these tanks with respect to the shape, size and the material of construction.
7. **Recharge structures:** Rainwater may be charged into the groundwater aquifers through any suitable structures like dugwells, borewells, recharge trenches and recharge pits. Various recharge structures are possible - some which promote the percolation of water through soil strata at shallower depth whereas others conduct water to greater depths from where it joins the groundwater. At many locations, existing structures like wells, pits and tanks can be modified as recharge structures, eliminating the need to construct any structures afresh

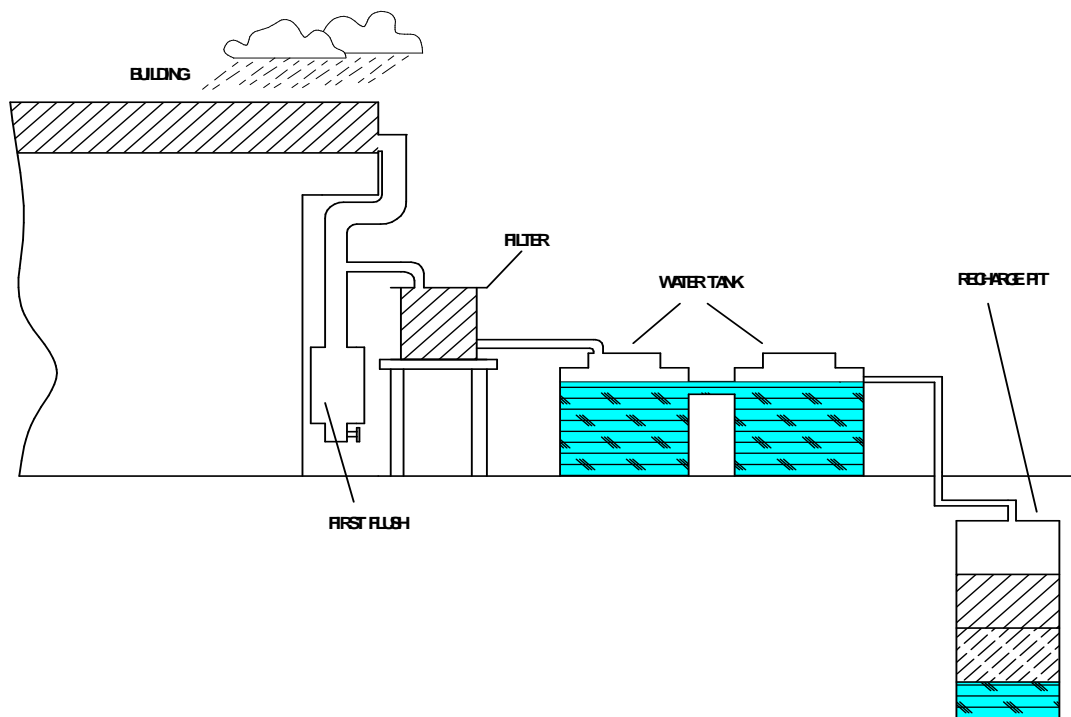


FIG: RAIN WATER HARVESTING

APPLICATION OF THE PROJECT

- Harvesting rainwater can help the environment in a number of ways. It can reduce erosion around downspouts and in gardens. It can also control storm water run-off. Rainwater doesn't produce scale and corrosion as hard water does. The collection of rainwater may reduce flooding in certain areas as well.
- Having a source of water can also reduce dependence on municipal sources in case the water becomes contaminated. Rainwater can be used as the primary source of water or as a backup source when needed.
- Digging deeper wells is not only expensive but can cause environmental damage such as collapsing the soil where the water used to be. It only makes sense to use sources of rainwater whenever possible. Harvested rainwater can be stored and then used during times of drought and when the ground water supplies have been depleted.
- The majority of the water we need is used for non-drinking. Everything from washing clothes and dishes to bathing and flushing toilets require large amounts of water. Rainwater can be used for all of these things. Rainwater is soft and can lessen the need for detergents when washing clothes and dishes. Rainwater can also be used for washing vehicles, bathing pets, and nearly all cleaning that uses water.
- Rainwater harvesting can also be used to improve plants and gardens. Using harvested water can flush the salt buildup from plants and soil. Harvested rainwater is generally free from several types of pollutants and man-made contaminants. Rain is also free from chlorination. Using water that is this clean and healthy for plants and trees can save money on overall property maintenance and landscaping needs.









FEEDBACK:

The project is functioning great, making it an innovative solution by utilizing the rain water that falls over the roof for various purposes like cleaning, washing, household chores, ground water recharging, etc.

As per the villagers the rain water collected in the tanks is very useful as the anganwadi teachers and students had to go farther for washing purpose, etc. As said by the teachers a few households who stay near to anganwadi also use the water for household chores.

PROJECT VI:

MOSQUITO REPELLANT DEVICE

MENTOR: Prof. VINAY B.K

DEPARTMENT: ELECTRONICS & COMMUNICATION ENGINEERING

STUDENT LEADER: PAVAN SINGH V (1CR16EC107)

TEAM MEMBERS:

- PALLAVI S BHATT (1CR16EC103)
- NIHARIKA K (1CR16EC098)
- NAVYASHREE CR (1CR16EC094)

DEPLOYMENT

DATE OF DEPLOYMENT: 24th August 2019

MOTIVATION:

The people in Marsandra were facing issues due to mosquitoes, In addition to being pesky bloodsuckers, mosquitoes are carriers of various diseases like dengue, malaria etc. These diseases can even prove to be fatal for the poor, who have little access to medical care. The houses being close to forest, bushes and drainage the mosquitoes have created impact on the health of the people. When asked them what are the measures they are taking in order to avoid, they answered that the mosquito coils and vaporizers are helping them to get rid of mosquitoes. However, the vaporized chemicals are not only harmful to mosquitoes, but to humans as well. So we thought of a device which can avoid mosquitoes don't have any side effects.

WORKING PRINCIPLE

Electronic mosquito repellent devices are effective, and require no toxic chemicals to work. They are much safer, and require less energy than vaporizers. An Electronic Mosquito Repeller repels mosquitoes by using a piezoelectric disk to generate ultrasound. The frequency of these sound waves is in the order of 20 kHz to 100 kHz. These sound waves cannot be heard by humans; however they can be heard by some animals, usually those that are small.

Even though human ear cannot sense US, many animals can produce and hear US. Many insects, rodents, bats and small mammals communicate through US. Insects have sensory structures to produce and detect ultrasound. Cockroaches have "Sensory hairs" to sense US. Fleas communicate using high frequency US. Male Mosquitoes produce US to attract females. Female mosquitoes have sensory structures to receive US. Spiders, lizards also have ability to sense US. Male mosquito is the natural enemy of female mosquito after breeding. Both male and female mosquitoes use plant juice as food. But female mosquito requires human blood protein for the maturation of their eggs. Male mosquitoes will not bite human beings. On the first day of emergence, the

female mosquito will not bite but after mating with male it starts to bite human beings to get blood. Female mosquito will not allow males to mate again and they avoid the presence of males. Females detect the presence of males by sensing the US produced by the males. If an US generator is used, it will imitate male mosquito by producing 38 kHz US. This will repel Female mosquitoes. Moreover the US will create stress on the US sensillae present on the antenna of female mosquitoes, so they move away from the source of US.

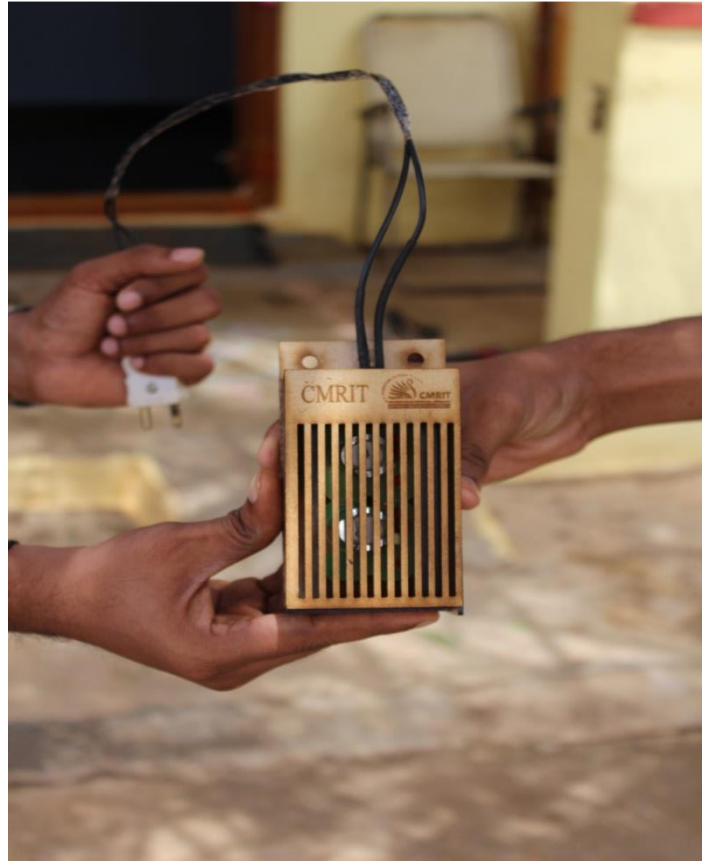
APPLICATION OF THE PROJECT

Mosquito repeller will help the villagers to keep the mosquitoes away from them. And reduce the dependence on mosquito coils and vaporizers which will in turn save them from various diseases like malaria and dengue.









FEEDBACK:

The Mosquito repellent is functioning very well and is able to help the inhabitants of the house we installed it in.

The inhabitants of the house were quite happy with the project and request more such repellars to be installed in their neighbourhood. They were happy that the device developed by us had no noise or smell and not harmful, unlike other repellars and worked quite efficiently.

**PROJECT VII:
AUTOMATION IN WATER MANAGEMENT
SYSTEM IN AGRICULTURE**

MENTOR: Prof. CYRIL. S

DEPARTMENT: MECHANICAL ENGINEERING

STUDENT LEADER: VIPUL KUMAR SINHA (1CR17ME087)

TEAM MEMBERS:

- ANIRBAN BHATTACHARJEE (1CR17ME009)
- SEEMA RATHOD (1CR17EC178)
- SNEHA DHANAN (1CR17EC189)
- VIGNESH RAMAKRISHNAN (1CR17ME085)
- ARAVIND U L (1CR17ME082)
- S PRAVEEN (1CR16EC138)
- SAKETH VIBHAV (1CR16EE065)

SURVEY

Date: 8th June 2019

OBSERVATION:

- They are already using drip irrigation system but it is not automated.
- They are using ground water as the source of water for irrigation.
- They are using wells to get ground water supply with the help of pump.



Among the various inspected sites one was found as suitable field to install the automated irrigation system.

Farmer Name: Gangappa

Contact No. : 9980754838

Type of Plant: Rose Plant

Current Irrigation system used: Drip Irrigation (Non- Automated)



Dimensions of the field:

Length: 195 feet

Width: 75 feet

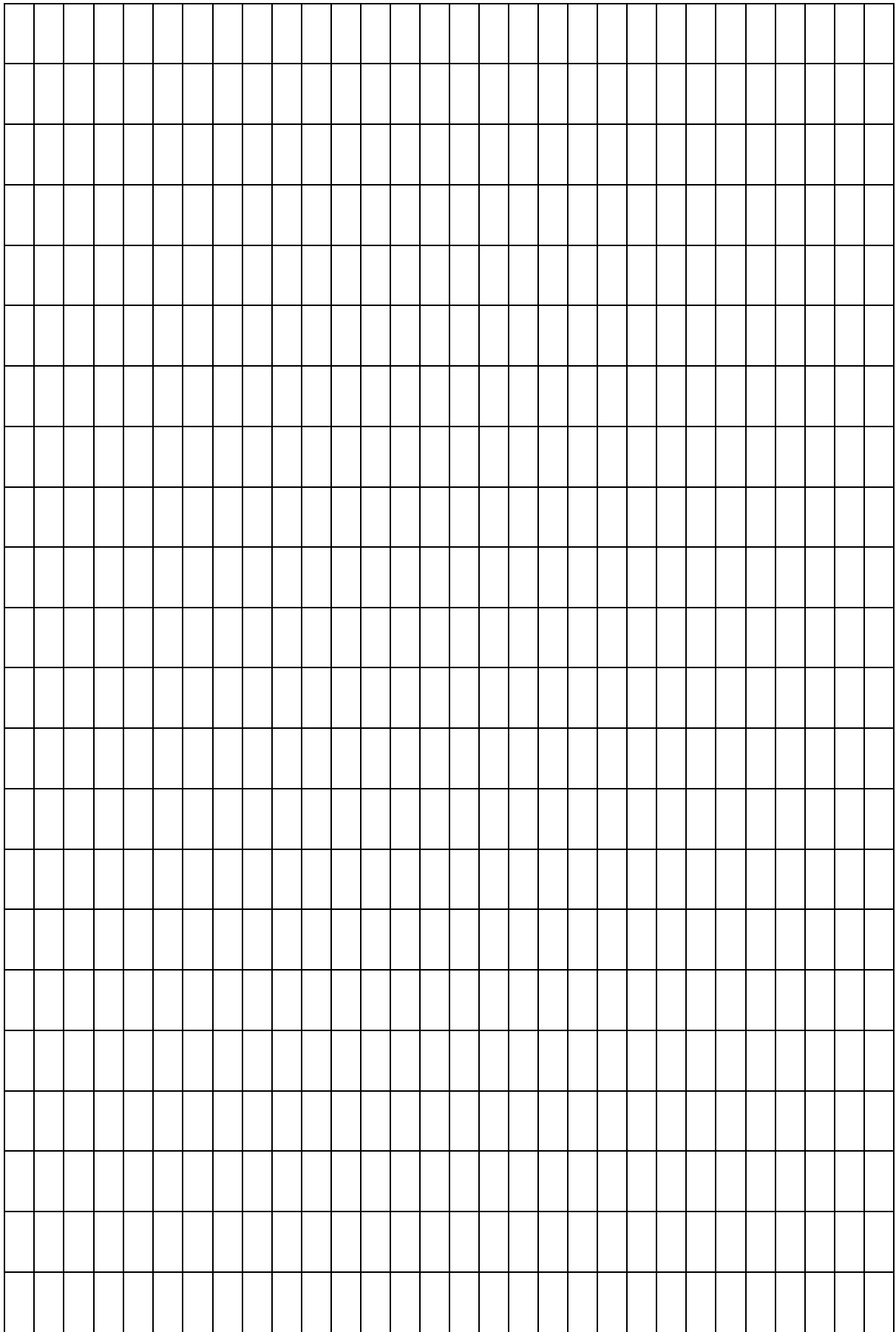
Area: 14625 sq. feet

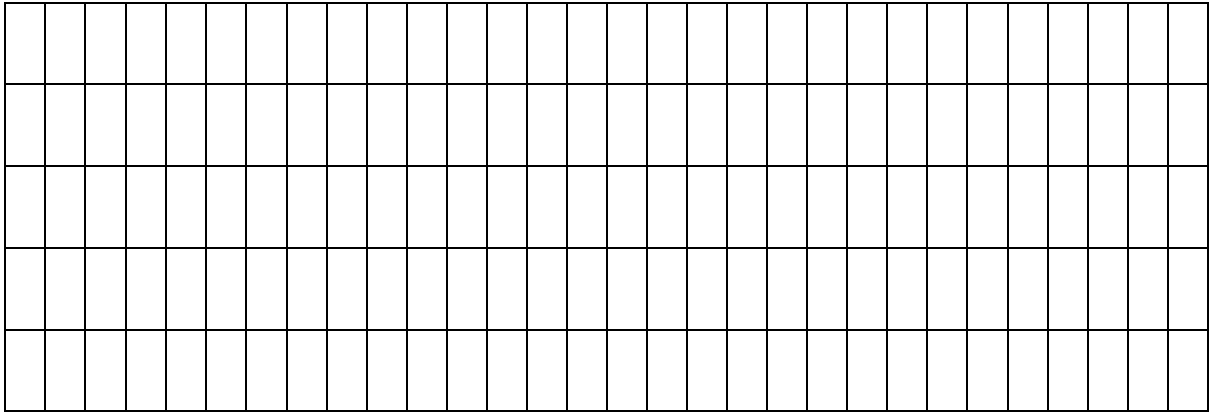
Distance between two plants: 2.5 feet

Number of plants in each row: 38 (Average)

Total Number of rows: 37

Total Number of Plants: $38 \times 37 = 1406$ plants





DIMENSIONS OF THE PROJECT

Length: 40 feet

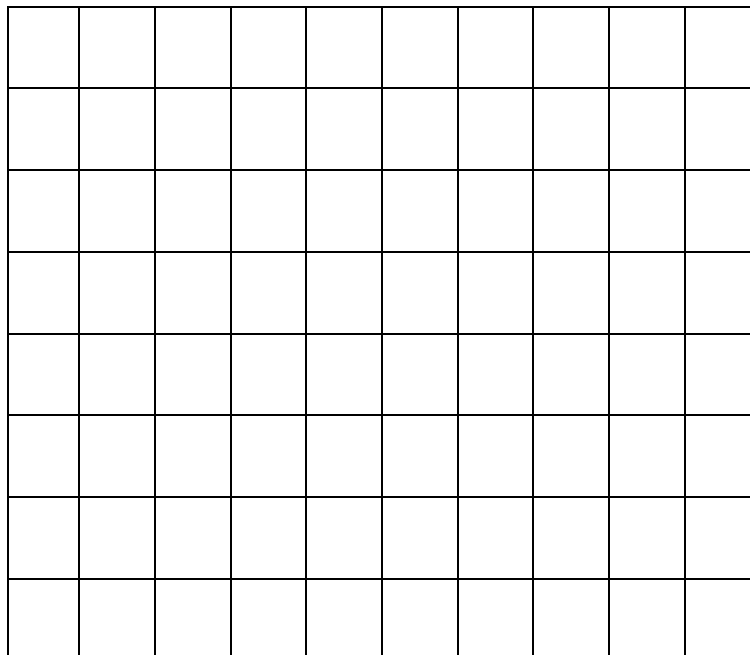
Width: 30 feet

Area: 1200 sq. feet

Total number of plants covered: 115 plants

PROJECT LAYOUT

- Each Intersection Point represents a Rose Plant



ADAVANTAGES

- It will save a large quantity of water.
- It will help farmers to irrigate the crops with more ease.
- It will lead to the development of automation in the field of agriculture.



DEPLOYMENT

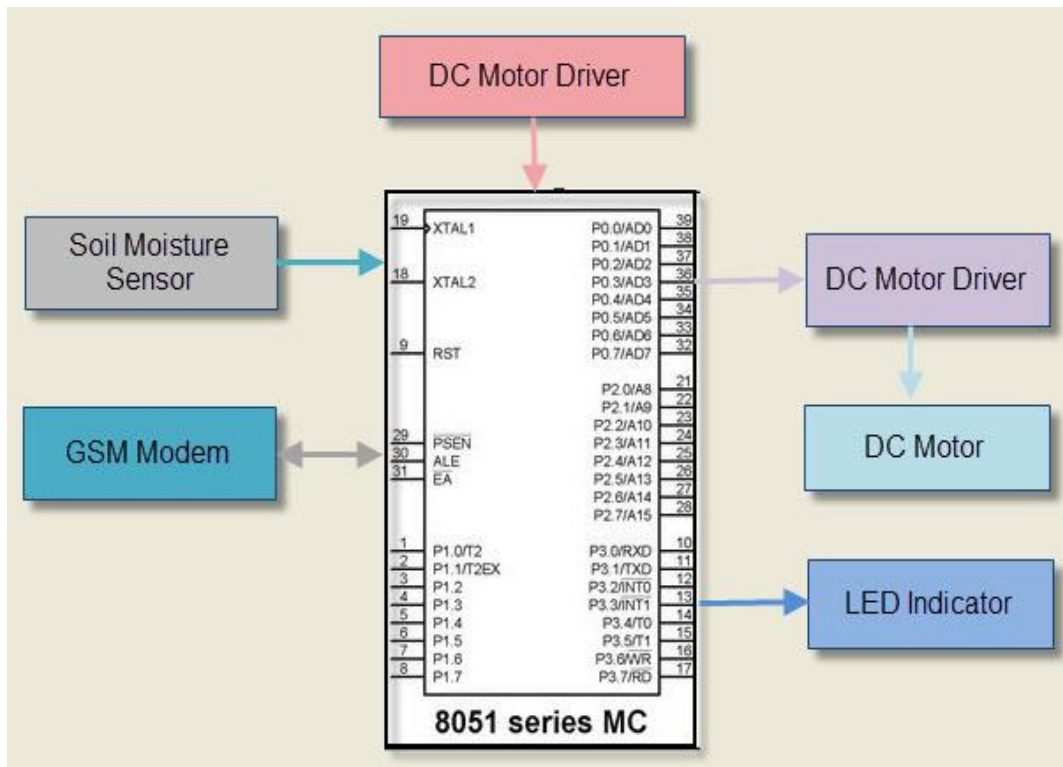
Date: 24th August 2019

MOTIVATION:

- Farmers face water shortage during summer.
- Certain times, crops are subjected to over-irrigation.
- Optimum amount of water is thereby required for the crops which in turn minimize the wastage of water.
- Supplying water at the root level increases the productivity.

WORKING PRINCIPLE:

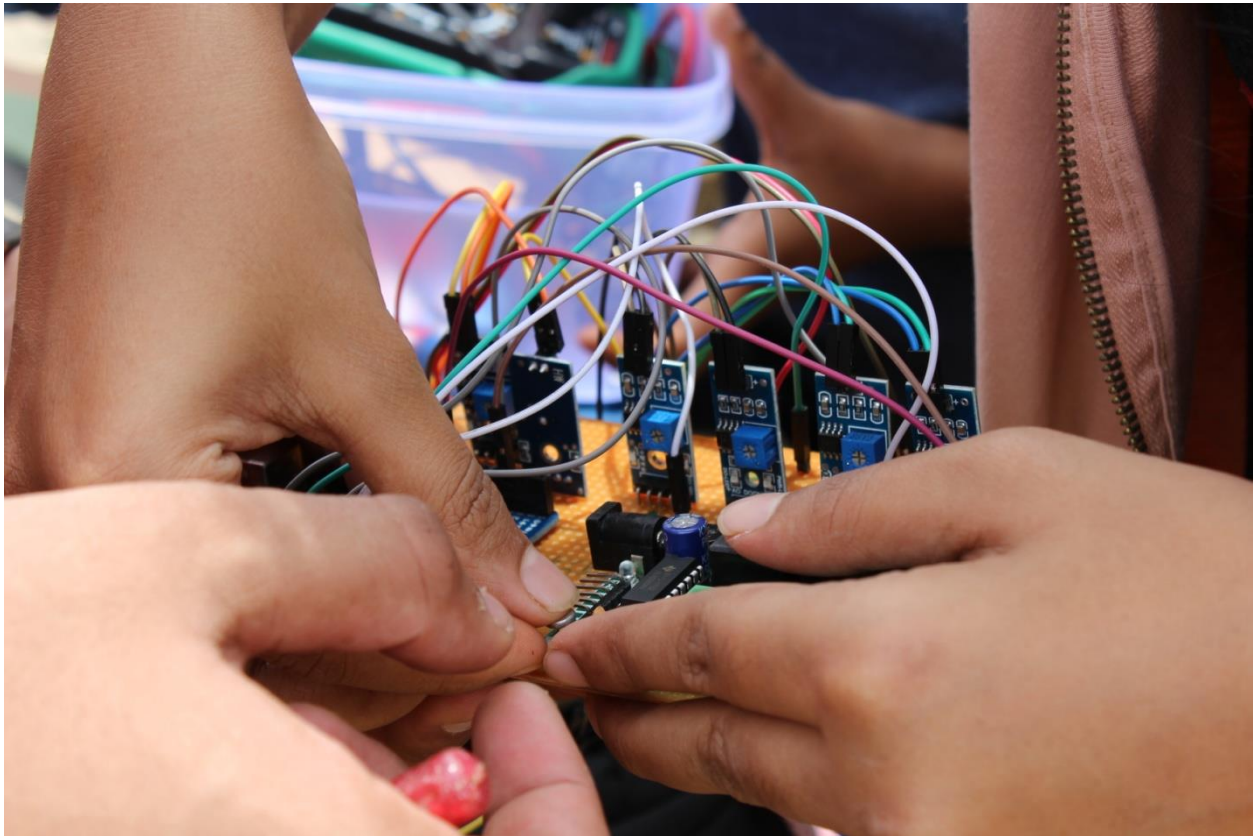
- Moisture of soil is sensed by the moisture sensor.
- This signal is sent to the micro controller which in turn actuates the pump to draw water from the storage tank.
- This water from the tank is supplied to the roots of the plant by drippers which are kept near the root of the plant.
- Once the required moisture is achieved, the sensor will send the signal to the microcontroller to stop the water supply.
- The system is fully automated which reduces the wastage of water by supplying optimum amount of water required for the plant.



APPLICATION

- During water shortage, plants will be irrigated as required.
- System helps in saving water and optimum utilization of available water.
- Power required for operation is very less and hence less electricity is required for the operation thereby benefiting the farmers economically.
- Sensors are robust which requires very less maintenance or no maintenance in most cases.

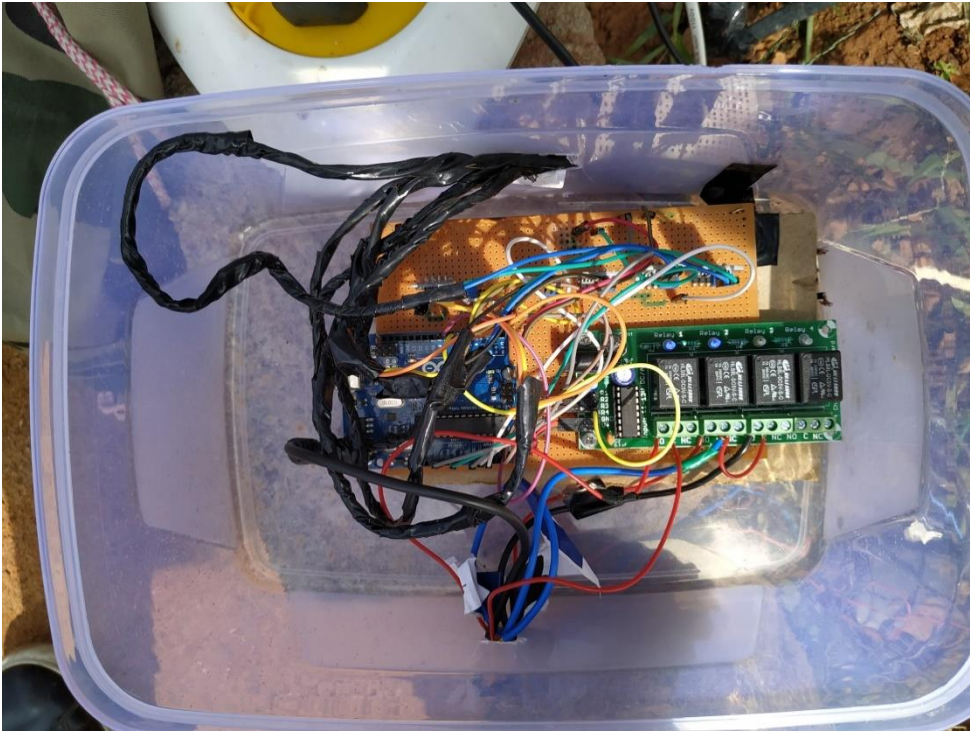








CIRCUIT



PUMP



ACTUATOR



DRUM



PIPE WITH DRIPPERS



FEEDBACK:

They found the automated drip system useful as it saves time and avoids over irrigation, thus saving water.

Since there is no need to continuously monitor as it switches of automatically after irrigation, they found it helpful.

They requested more robust casing to place the circuit, which was provided late.

The Automated Drip Irrigation System is easy to operate and is very efficient. It does not require continuous monitoring and saves significant amount of water and time according to the feedback received from the farmer.

PROJECT VIII:
**CUSTOMISED APP FOR MARSANDRA
VILLAGE**

MENTOR: Prof. SHIVARAJ V B

DEPARTMENT: COMPUTER SCIENCE ENGINEERING

STUDENT LEADER: VIPUL KUMAR SINHA (1CR17ME087)

TEAM MEMBERS:

- HARSHITH KUMAR (1CR17CS048)
- SURAJ KISHORE (1CR17CS159)
- PILLAI VIGNESH SURESHKUMAR (1CR17CS09)
- HITHESH KUMAR C M (1CR17CS051)

SURVEY

Date of Survey: 8th June 2019



Information Collected:

Transportation:

Bus Frequency is Average.

BMTC Buses Available: 308 B, 308 A, 289 L

Auto:

Auto facility is Poor.

Auto driver Name: Afaroz

Contact No. : 8095255617



Education:

Education up to 5th standard is only available.



Garbage:

They collect and use to make manure and fertilizers.

Hospital:

Only one private and one government hospital is available near to the village.

As per the Survey, the villagers require the following information in the application:

- Detail information of educational institutions near the locality.
- Auto driver number and bus timings
- Hospital contact number for calling Ambulance and hospital info.



DEPLOYMENT

DATE OF DEPLOYMENT: 24th August 2019

MOTIVATION:

The objective of the project is to provide details about nearby hospital, doctors, auto drivers, bus timings and if possible higher education details also through MOBILE APP. The project aims to develop an android app that the people of the Marasandra can use to manage the basic details mentioned above. In future the team has a plan to provide the details in a regional language in order to increase the reach of the app usage.

WORKING PRINCIPLE

- Used Android Development Tool.
- Collect details from vendors like hospital, taxi drivers, and schools, BMTC.
- Display the information in organized way.
- Update the details whenever required.

APPLICATION OF THE PROJECT

- Detail information of educational institutions near the locality.
- Auto driver number and bus timings
- Hospital contact number for calling Ambulance and hospital info.
- Language Used: English (to be converted to Kannada)
- Symbols are used to make the Mobile App more user-friendly.

English version of the App has been deployed to the devices of two members of the village and explained them about the various information the App can provide.





USER INTERFACE OF THE APPLICATION:

MAIN PAGE



HOSPITAL



ಆಂಬ್ಯುಲೆನ್ಸ್ ಕರೆ ಮಾಡಿ



ಸ್ಥಳ / ಮಾಹಿತಿ



ಕೆ.ಸಿ.ಇ.ಟಿ

ಜಿ.ಇ.ಇ ಮುಖ್ಯ

ಜಿ.ಇ.ಇ ಸುಧಾರಿತ

ನೀಟ್

TRANSPORTATION

ಬಸ್ ಮಾರ್ಗ



ರಿಕ್ಷಾ ಮಾರ್ಗ



BUS TIMMINGS

ಬಸ್ ಹೆಸರು ಮತ್ತು ಸಮಯ

ಯಲಹಂಕ ಓಲ್ಡ್ ಟೌನ್ (289-ಎಲ್)	7:16 pm
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ಕೆಆರ್ ಮಾರುಕಟ್ಟೆ (308-ಬಿ)	8:25 pm
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ಎಂವಿಜಿ ವೈದ್ಯಕೀಯ ಆಸ್ಪತ್ರೆ (289-ಎಲ್)	9:08 pm
---------------------------------------	---------

ಕೆಆರ್ ಮಾರುಕಟ್ಟೆ (308-ಬಿ)	4:25 am
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ಕೆಆರ್ ಮಾರುಕಟ್ಟೆ (308-ಬಿ)	6:15 am
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ಕೆಂಪೇಗೌಡ ಬಸ್ ನಿಲ್ದಾಣ (308-ಎ)	7:05 am
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ಯಲಹಂಕ ಓಲ್ಡ್ ಟೌನ್ (289-ಎಲ್)	7:26 am
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ಎಂವಿಜಿ ವೈದ್ಯಕೀಯ ಆಸ್ಪತ್ರೆ (289-ಎಲ್)	9:18 am
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ಕೆಆರ್ ಮಾರುಕಟ್ಟೆ (308-ಬಿ)	9:35 am
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ಯಲಹಂಕ ಓಲ್ಡ್ ಟೌನ್ (289-ಎಲ್)	9:46 am
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ಕೆ.ಆರ್.ಪುರಂ ಮಾರುಕಟ್ಟೆ (12 ಎಫ್ -4)	10:00 am
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FEEDBACK:

- Initially the application was designed in English.As per the villagers' request, since they preferred Kannada, the Kannada vwersion was added as well.
- The villlagers were thankful since it provides all the useful information that are useful for their daily life such as bus timings, nearest hospital details and contact information, location information ,contact of educational institutions nearby etc.

PROJECT IX: MARSANDRA ANGANWADI DATABASE MANAGEMENT SYSTEM

MENTOR: Prof. JHANSI RANI P, Prof. MANJIMA R L

DEPARTMENT: COMPUTER SCIENCE ENGINEERING

STUDENT LEADER: RUSHYANTH (1CR17CS117)

TEAM MEMBERS:

- MUKUL NAIR (1CR17CS077)
- RICARD DELWIN MYLOTH (1CR17CS109)
- SAYAN PAL (1CR17CS132)

SURVEY

DATE : 24th August 2019



Survey

The aim of the project is to create a Database management system for the Anganwadi and for the primary school in the village of Marasandra with a very simple and user-friendly interface which can be used by the personnel in-charge to implement a safe repository of information which is not lost due to natural circumstances

The main aim of the visit was requirement elicitation, to collect information, which gives us an insight as to the functioning of the Anganwadi, and the data that is used by Anganwadi so that we can design the database schema and design our database efficiently.

The information that had to be collected is centered on the different activities that would occur in the Anganwadi of the village. This information would provide us with necessary idea of the role played by the Anganwadi in managing the distribution of various government supplied resources to the villagers.

Apart from this, we also visited the nearby primary school, which led us to the decision of extending project to include the records of all the activities that occurs within the school as another feature of our Anganwadi Database Management System.



OBSERVATIONS:

Anganwadi

We met concerned personnel of the Anganwadi, from whom we understood all the activities that take place there and how it helps the villagers. All the information is recorded and is maintained manually through books. Thus, our intervention enabled them to record every detail digitally.

The following are the few activities: of the anganwadi

1. Health Services: The health services provided include:

- Immunization and Vaccination: They are supplied to the Anganwadi from the government which is then distributed to kids. A record of the children, the vaccination ID along with the vaccination status is maintained.
- Basic Health check-ups: The target group are children below 6 years & pregnant and lactating mothers (P&LM).
- Referral services: These services are provided to children below 6 years & pregnant and lactating mothers (P&LM).

2. Nutritional services:

- Supplementary Nutrition: Vitamins such as A,B and C are supplied to children.
- Growth Monitoring and Promotion: Growth promoting supplements are administered to the children. A record is to be maintained for the name, date of check-up, and supplements administered.

3. Daily food inventory: Food supplied from the government is distributed to the government in ration, a record of the amount of food given to each person in terms of weight is to be made and maintained.

4. Visits from Bagalur Government Hospital: The nurses of the healthcare center visit the Anganwadi on a monthly basis. A record of the visiting-nurses Anganwadi is to be maintained as well.

5. Meetings: Regular meetings are hosted between the teachers, parents and the members of the village to discuss various issues. A record of the people who attend the meeting is to be maintained for future use.

6. Pre-School informal education: They include various learning activities at the Anganwadi.

Primary School

We visited the Marasandra GLPS School, where we interacted with Ms.Asha M,teacher of that school, who provided us with a detailed insight on the functioning of the school.



The following activities can be digitized:

1. Attendance Based on Lesson Plan: We had a look into the attendance records of the students and the grades of students admitted to that school, we learnt that the attendance is marked based on the lessons completed and the current students range from class 1 till 5.
2. Admissions: The details of students admitted into the School would be recorded.
3. Midday meals: The School provides Midday meals to the children studying in school, a record is to be maintained for the students who are served lunch in the afternoon.
4. Books and Stationery: The School also provides books and stationery for the students; hence a record is to be maintained for each Student and the Stationery issued to him.
5. Tests: The school conducts 6 tests per year, 4 Formative Assessments and 2 Summative assessments. The Summative assessments are taken on a half yearly basis out of 100 and the four Formative Assessments are taken in regular intervals on 50 marks.

DEPLOYMENT

Date: 27th September 2019

MOTIVATION:

As a team we have always wanted to implement the things we have learnt and to contribute to the society to make a difference. Creating the management system would enable them to keep track of the amenities they receive from government institutions in a more precise and efficient manner.

For Schools: keeping track of utilities, stationary books, uniform etc. would ensure that they receive it correctly. Tracking attendance, lesson plans would ensure that the education would be imparted seamlessly.



DESIGN:

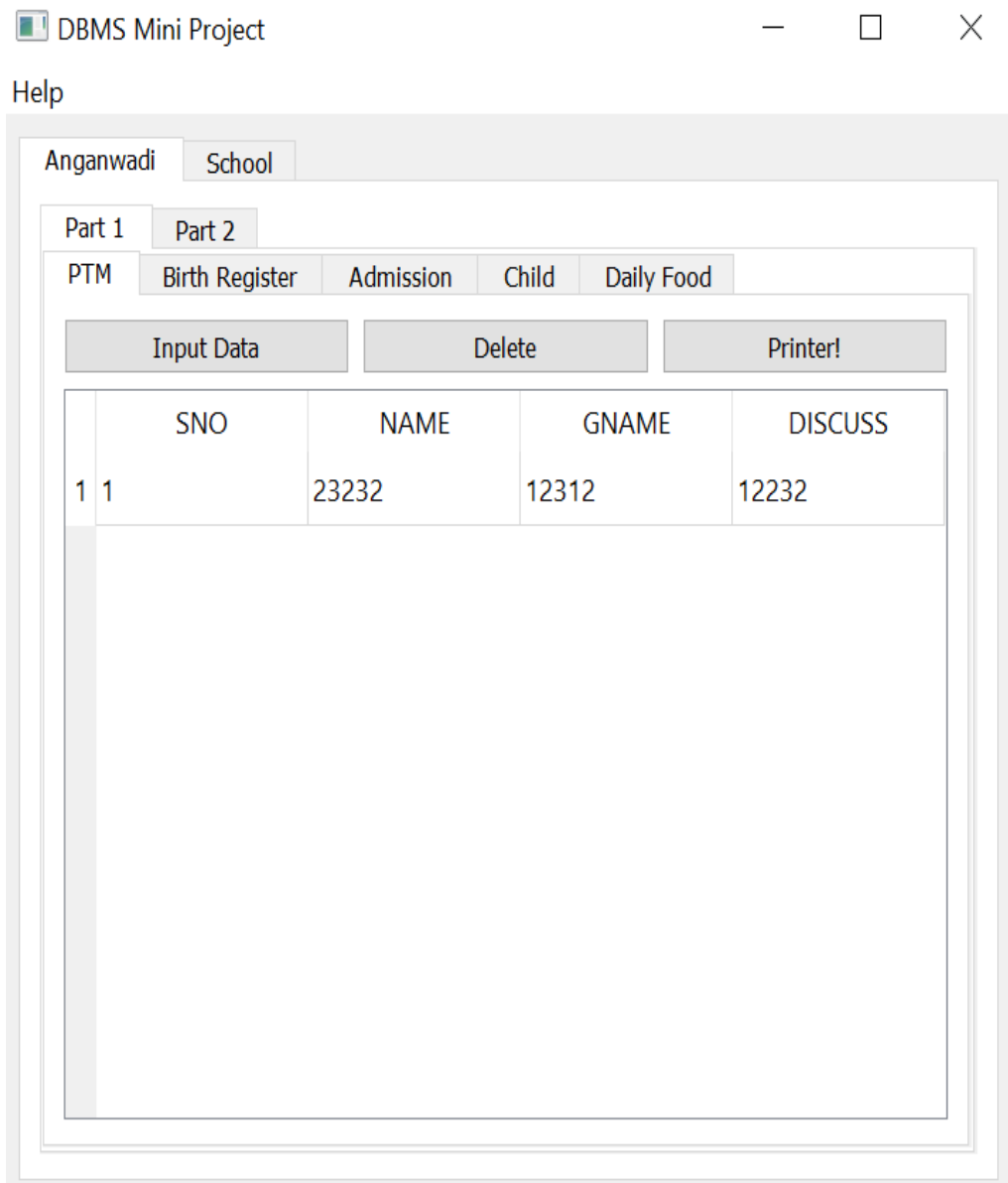
Our team has implemented a python based GUI with SQLite as our database which keeps a track of all the records in a systematic and secure manner. The application is provided with a help button which briefs about our application for a new user. Facilities like updation, deletion and printing of records is also provided in our application.

The application is divided into 2 Tabs – Anganwadi and School. Anganwadi tab is further divided into various smaller tabs to handle each of the tables

corresponding to the various activities (Family census, Medicines for pregnant ladies, Vaccinations etc.) conducted by Anganwadi.

Similarly the School tab is divided into smaller tabs to handle various tables like student performance and attendance and distribution of Uniforms and Books.

The application is provided with a help button which briefs about our application for a new user.



WORKING PRINCIPLE:

The Anganwadi management system is a database management system which implements a relational data model in DBMS. SQLite3 is the database management system which is used to handle the database.

The Graphical User Interface (GUI), is developed using PyQt5, which is a cross platform GUI toolkit of, implemented as a Python plug-in.

GUI

The segments of code that forms the GUI has been categorized into four categories:

1. `main.py` : This section of code acts as the base upon which other aspects of the gui is centered around. The definition of all elementary aspects of the interface are specified here, from defining it's layouts to defining the widgets necessary to implement the various tables and views.

Help: The main section also handles the “help” feature of the system. The module of “help”, which are retrieved from structured PDFs, associated with different components of the system are invoked in the main segment.

2. `TableView.py`: Every database tables from both the sections i.e. Anganwadi and School, are defined using the template which was coded in the `TableView.py` file. This file primarily consists of a class called “Table” which inherits the `QtableView` widget provided by the QT toolkit. This class deals with the initialization of all the tables with its respective database. It also does handle the superficial appearance of the table in the interface – from setting up the model of the table to defining its dimensions and layouts.
3. `Anganwadi.py`: The Anganwadi file essentially forms the heart of the system. All the tables associated with the Anganwadi and the school are described in this file using SQLite. The creation of tabs in the interface for all the attributes, setting up the distinct layouts of every individual table, record, additional functionalities unique to the table are defined here. The insertion, deletion, manipulation of records and printing of the file are described in this segment. The connection between the database

and the GUI is established in this segment. Thus, the operations that are performed on the data are executed here.

- Insertion of record / updation of data: This method inserts/updates the data into the corresponding relation in the database. The input/update data is received through a form dialog.
- Deletion of record: This method is used for deletion of the record which has been highlighted by the user. The highlighted record is identified with the help of listeners.
- Printing of data/ creating an Excel file: The records can be printed by selecting the tab which has to be printed followed by pressing the print button. The method defined for printing handles:
 - ✓ Retrieving data from the selected relation
 - ✓ Conversion of the records into a data frame using pandas, followed by generation of an .xlsx file which is saved at the desired destination.
 - ✓ Formatting of the excel cell size to prevent truncation of data while printing
 - ✓ Printing the file at the connected printer

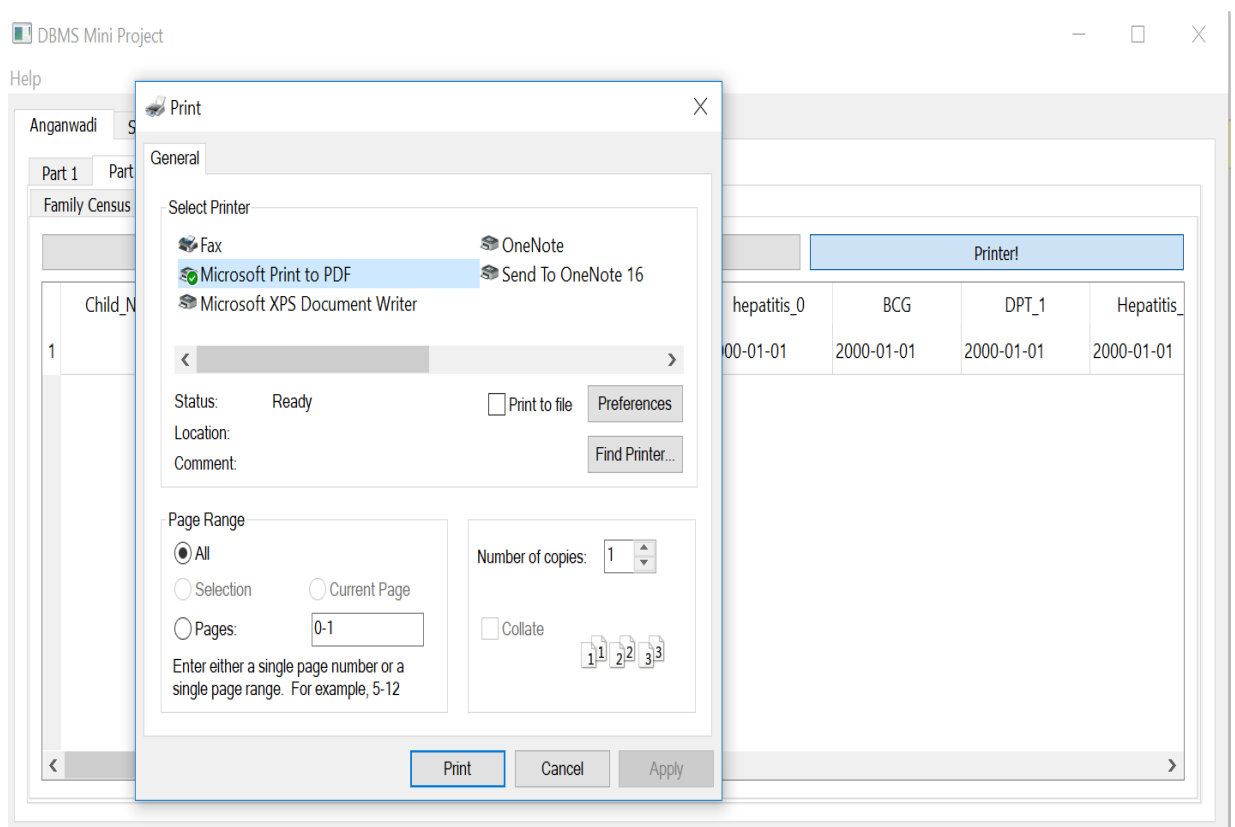
The image shows a 'Vaccination' form dialog box with the following fields and values:

Field	Value
Child's Name	
Gender	Male
DOB	01-01-2000
Registration Date	01-01-2000
Polio	01-01-2000
Hepatitis-0	01-01-2000
BCG	01-01-2000
DPT-1	01-01-2000
Hepatitis-1	01-01-2000
OPV	01-01-2000
DPT-2	01-01-2000
Hepatitis-2	01-01-2000
OPV-2	01-01-2000
DPT-3	01-01-2000
Hepatitis-3	01-01-2000
OPV-3	01-01-2000
++MMR-1	01-01-2000
+ life dose 1	01-01-2000
DPT Booster	01-01-2000
++MMR-2	01-01-2000
Survived first Birth	01-01-2000

4. FormDialog.py: All the inputs to the tables of the respective database are executed via a form dialog. The technical facets concerned with the

retrieval of data from the user and relaying it to the appropriate table for insertion and updation operations are handled by this code segment. The forms are generated based upon the characteristics of the attributes, and accordingly a drop down list, text field, date field, selection fields etc. are generated. The data is handled as dictionaries, associating it with its respective attributes as its key, and itself being the value.

Other aspects concerned with avoidance of duplicate entry of data, and complying with the constraints imposed on the attribute, such as its data domain and type, along with considering violations such as foreign key, primary key and entity integrity violations are also handled to ensure effortless functioning of the system.



SQLite

Separate SQL files are defined to provide persistent storage of data.



ALGORITHM:

1. The main.py file is the hub which acts as a link between all the files.
2. FormDialog.py file keeps the schematics of all the forms which are required to fill while giving entries into the application.
3. School.py and Anganwadi.py are the two files which keeps track of all the records in the respective segments.
4. SQLInit.py is the file which has all the SQL queries for insertion, deletion and updation of data.
5. InsertAndAddTable.py and TableView.py are the two files which helps in insertion and display of data inside each record.
6. Finally all the files are interlinked and called with appropriate variables and requirements and record tracking work's fine because of proper functioning of all the function calls.



APPLICATION:

Our project has the following objectives:

1. Make all the records computerize.
2. Reduce scope of error
3. All system managements are automated.
4. Centralized database management system.
5. Easy operation for operator of the system.
6. No paper work requirement.

The system composed of the above specified segments are seamlessly integrated to ensure effortless and harmonic functioning of the entire system where the GUI (PyQt5) and SQLite DBMS is combined to offer an efficient and a clean system. All the aspects specified are in proper working condition.



FEEDBACK:

Before the Anganwadi DBMS, all the records were done manually. Records and entries were prone to natural calamities and there was a possibility of entering wrong data or alterations. Initially with our application people in the anganwadi struggled as they were not used to using a computer. Since our application was simple they became more comfortable and enjoy using it due to ease of use. Now accessing any data has become much simpler for them. Even if there is a natural calamity the data is safe and there is backup for the data. Now the anganwadi officials find the application easy to use and prefer this way of maintaining records

CONCLUSION

The village adoption scheme is a model for energizing the rural economy in India and is designed in such a way that the use of resources existing in the social, traditional, cultural, legal, ethnic, religious, economic and political layers of the rural society and seeks to enable the region to build on it resulting in the generation of sustainable resources

All the activities and technical projects for Marsandra were carried out successfully as planned thanks to the joint effort and cooperation of all the stakeholders involved.

The villagers of Marsandra were highly supportive during the entire execution of the above mentioned initiatives and were extremely happy and impressed with the various initiatives of CMRIT including all the activities organized as well as the technical projects deployed. All the projects deployed are currently being used to their full capacity by the villagers. They were delighted with the projects installed and found them highly useful. They explained how the projects are helping them to make their work more efficient, easier and also gave some essential suggestions. The village chairperson also visited the project sites and was glad to see the projects installed for the development of the village.

The faculty and students had an enriching and a valuable year long experience and would love to be part of the same initiative once again.

CMR Institute of Technology, Bangalore is happy with the outcome of its initiative and plans to conduct such activities and initiatives in the future as well.

NEWSPAPER CLIPPINGS

CSR : CMR Institute of Technology adopts Marasandra village

CMR Institute of Technology adopts Marasandra village

November 12, 2018 The Education Times News Bureau 0 Comments Bengaluru, CMR, CMRIT, Development, Dr. Sanjay Jain, Gram Panchayat, Institute, Jalahobi, JalaHobli, Mandur, Marasandra, Sharmila, technology, theeducationtimes.in

Bengaluru, November 13, 2018: City-based CMR Institute of Technology (CMRIT) has adopted Marasandra village with the help of village Gram Panchayat. A MoU was also signed between CMRIT and Marasandra, Mandur, Jalahobli, Bengaluru. CMRIT has taken up this initiative to help the village in the area of education, healthcare, agriculture, energy, environment, and others, through various schemes and seminars. CMRIT and Marasandra communities will work together at the grass-root level, enabling them to pursue the common goal for overall development of the village.

A survey was done recently by the team of student communities and faculty members of CMRIT to explore the village. The team visited 220 houses, which were part of Marasandra village located near Mandur, Jalahobli in Bengaluru North. The village has been facing many problems and lacks basic infrastructure like roads, washroom facilities in the schools, increased pollution in the village, shortage of water, farmers struggling for cattle mats and poor drainage system, among others. The survey aims to provide an opportunity for young men and women to enhance their knowledge and skills which will assist them in personal development as well as fulfill the social needs to address the countless problems faced by the rural population through brain storming. The institute has always encouraged and supported a collaborative atmosphere that gives rise to technological and social innovation.

CMRIT has successfully lent a helping hand to the villagers of Marasandra. The MoU seeks to give an overall view of the possible activities that can be carried out as well as develop basic understanding between the Gram Panchayat and CMRIT in the following areas.

Dr Sanjay Jain, Principal, CMRIT on signing the MoU expressed his gratitude towards the people of Marasandra village. He said, "I feel very proud to see my students coming together and taking this initiative to provide help to those in need especially Marasandra Village. It's an overwhelming experience for CMRIT. I also would like to thank people who have come forward to fight for common interest in the field of social upliftment and application of technology for social needs and have decided to join hands in conducting various activities and events. The journey will help both Marasandra village and CMRIT to explore new avenue for development."

Prof. Sharmila KP, CMRIT, the lead of the projectsaid, "I am thrilled to work for the development of the village using innovation and expose them to the modern world filled with technology."

CMR Institute of Technology, gram panchayat join forces to improve village

As part of the arrangement, CMRIT and the community will work together in the areas of education, healthcare, agriculture, energy, environment and others through various schemes and seminars.



Published: 13th November 2018 08:25 AM | Last Updated: 13th November 2018 08:25 AM



CMR Institute of Technology adopts Marasandra village

Published on November 12, 2018

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CMR Institute of Technology adopts Marasandra village

Indian Newsz Uncategorized November 13, 2018 2 Minutes

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ಮಾರಸಂದ್ರ ಗ್ರಾಮವನ್ನು ದತ್ತು ಪಡೆದ ಸಿಎಂಆರ್ ಇನ್‌ಸ್ಟಿಟ್ಯೂಟ್ ಆಫ್ ಟೆಕ್ನಾಲಜಿ



ಮೂಲ ಸೌಕರ್ಯ ಅಭಿವೃದ್ಧಿಗೆ ಸಿಎಂ ಆರ್ ಐಟಿ

ಉದಾಹರಣೆಗೆ ರಸ್ತೆ, ಶಾಲೆಗಳಲ್ಲಿ ಶೌಚಾಲಯಗಳು, ಅತಿಹೆಚ್ಚು ಜನಸಂಖ್ಯೆ, ನೀರಿನ ಕೊರತೆ, ರೈತರು ಜಾಮಾಬಂದಿಗೆ ಮೇವು ಕೊರತೆ, ದುಭೇಲಿ ಒಳಚರಂಡಿ ವ್ಯವಸ್ಥೆ ಸೇರಿದಂತೆ ಹಲವು ಸಮಸ್ಯೆ ಹೊಂದಿದೆ.

CMRIT has successfully lent a helping hand to the villagers of Marasandra. The MoU seeks to give an overall view of the possible activities that can be carried out as well as develop basic understanding between the Gram Panchayat and CMRIT in the following areas

Assisting in organizing socially benefiting events for the villagers

To look after the over-all development in improving the cleanliness and hygiene standards in the village as well as provide skills in the improvement of education and technical skills

Introduction of innovative technological solutions to improve the quality of life, organize health check-ups with the help of medical experts.



Dr Sanjay Jain, Principal, CMRIT on signing the MoU expressed his gratitude towards the people of Marasandra village. He said, "I feel very proud to see my students coming together and taking this initiative to provide help to those in need especially Marasandra Village. It's an overwhelming experience for CMRIT. I also would like to thank people who have come forward to fight for common interest in the field of social upliftment and application of technology for social needs and have decided to join hands in conducting various activities and events. The journey will help both Marasandra village and

CMRIT to explore new avenue for development."

Prof. Sharmila KP, CMRIT, the lead of the project said, "I am thrilled to work for the development of the village

APPENDIX – A

TECHNICAL PROJECTS TEAMS

The Technical Projects along with their team details are listed below:

1. Solar Tree @ Marsandra

Mentor: Prof. Kashif Ahmed

Department: Electrical & Electronics Engineering

Student Leader: Saket Vaibhav (1cr16ee065)

Team Members:

- D V Bhuvan (1CR16EE019)
- Shaktivel Rajavelu (1CR16EE072)
- Harshita Kanchan (1CR16EE028)
- Ria Augustine (1CR17EE057)
- K Dinesh Raj (1CR17EE027)
- Akshay Rajeev (1CR17EE004)
- Sristi (1CR17EE070)

2. FarmerMate App

Mentor: Prof. Raveesh Hegde

Department: Telecommunication Engineering

Student Leader: Charan Tej P.V. (1CR16TE011)

3. Pedal operated Flour Mill

Mentor: Prof. Vinay M N

Department: Mechanical Engineering

Student Leader: Syed Abdulla (1CR16MEo80)

Team Members:

- Gopikrishna G (1CR17ME405)
- V Shanker Adarsh (1CR16MEo84)

4. Low cost Portable Biogas Plant

Mentor: Prof. Narendra Kumar Fatehpuria

Department: Civil Engineering

Student Leader: Thejus L (1CR16CVo68)

Team Members:

- C J Vajra (1CR16TEo04)
- Dino Raju (1CR16TEo02)
- Architha K(1CR16TEOO3)
- Sakshi Mishra(1CR16TEo42)
- Amogh M P(1CR16TEo42)
- Jennifer T.(1CR17CV425)
- Karthik Nk(1CR16CVo27)
- Vrunda (1CR16CVo74)

5. Rainwater Harvester

Mentor: Prof.Vinay M N

Department: Mechanical Engineering

Student Leader: Thejus L (1CR16CVo68)

Team Members:

- Gopikrishna G (1CR17ME405)
- Syed Abdulla (1CR16MEo80)
- Vignesh Ramakrishnan (1CR17MEo85)
- U Arvind Lambodhar (1CR17ME o82)
- V Vijay Kumar (1CR17ME o83)

6. Mosquito Repeller

Mentor: Prof. Vinay B.K

Department: Electronics & Communication Engineering

Student Leader: Pavan Singh V (1CR16EC107)

Team Members:

- Pallavi S Bhatt (1CR16EC103)
- Niharika K(1CR16EC098)
- Navyashree CR (1CR16EC094)

7. Drip Irrigation System

Mentor: Prof.Cyril. S

Department: Mechanical Engineering

Student Leader: Vipul Kumar Sinha (1CR17ME087)

Team Members:

- Anirban Bhattacharjee (1CR17ME009)
- Seema Rathod (1CR17EC178)
- Sneha Dhanan (1CR17EC189)
- Vignesh Ramakrishnan (1CR17ME085)
- Aravind U L (1CR17ME082)
- S Praveen (1CR16EC138)
- Saketh Vibhav (1CR16EE065)

8. Marsandra Mobile App (English & Kannada)

Mentor: Prof. Shivaraj V B

Department: Computer Science Engineering

Student Leader: Vipul Kumar Sinha (1CR17ME087)

Team Members:

- Harshith Kumar (1CR17CS048)
- Suraj Kishore (1CR17CS159)
- Pillai Vignesh Sureshkumar (1CR17CS09)
- Hithesh Kumar C M (1CR17CS051)

9. Anganwadi Management System

Mentor: Prof. Jhansi Rani P, Prof. Manjima R L

Department: Computer Scinece Engineering

Student Leader: Rushyanth (1CR17CS117)

Team Members:

- Mukul Nair (1CR17CS077)
- Ricard Delwin Myloth (1CR17CS109)
- Sayan Pal (1CR17CS132)

APPENDIX - B



CMR INSTITUTE OF TECHNOLOGY

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APPENDIX - C

GOVERNMENT SCHEME FLYER



CMR Institute of Technology
132 AECS Layout
ITPL Main Road
Kundalahalli
Bangalore 560037, India

Government Welfare Schemes

I Welfare Schemes

1. Karnataka Government's Education Welfare Schemes
2. Women and Child Welfare Initiatives by Karnataka Government
3. Health and Family Welfare Initiatives by Karnataka Government
4. Welfare of the Disabled Population by Karnataka Government.
5. The scheme for educating girl students.

II Housing Schemes

1. Pradhan Mantri Awas Yojana.
2. Rajiv Gandhi Rural Housing Corporation.

For Further Details Contact: *Mr RaviKumar .C*

Phone Number:9343468270/28524466/77(306)

6.6.2019



ಸಿ.ಎಂ.ಆರ್.ತಾಂತ್ರಿಕ ಮಹಾವಿದ್ಯಾಲಯ,

ಸಂಖ್ಯೆ: 132 ಎಐಸಿಎಸ್ ಲೇ ಔಟ್, ಎ.ಐ.ಪಿ.ಎಲ್. ಮೈನ್ ರಸ್ತೆ, ಕುಂದಲಹಳ್ಳಿ, ಬೆಂಗಳೂರು-560 037, ಭಾರತ

ಸರ್ಕಾರದ ಸಮಾಜ ಕಲ್ಯಾಣ ಯೋಜನೆಗಳು

I. ಸಾಮಾಜಿಕ ಅಭಿವೃದ್ಧಿ ಕಾರ್ಯಕ್ರಮಗಳು

1. ಶೈಕ್ಷಣಿಕ ಅಭಿವೃದ್ಧಿ ಕಾರ್ಯಕ್ರಮಗಳು:
2. ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ಮಹಿಳಾ ಮತ್ತು ಮಕ್ಕಳ ಅಭಿವೃದ್ಧಿ ಕಾರ್ಯಕ್ರಮಗಳು
3. ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ಆರೋಗ್ಯ ಮತ್ತು ಕುಟುಂಬ ಕಲ್ಯಾಣ ಯೋಜನೆಗಳು
4. ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ವಿಶೇಷಚೇತನ (ಅಂಗವಿಕಲ) ಜನಸಂಖ್ಯೆಯ ಕಲ್ಯಾಣ ಯೋಜನೆಗಳು
5. ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಶಿಕ್ಷಣ ನೀಡುವ ಯೋಜನೆಗಳು

II. ವಸತಿ ಯೋಜನೆಗಳು:

1. ಪ್ರಧಾನ ಮಂತ್ರಿ ಆವಾಸ ಯೋಜನೆ
2. ರಾಜೀವ್ ಗಾಂಧಿ ಗ್ರಾಮೀಣ ವಸತಿ ನಿಗಮ

ಹೆಚ್ಚಿನ ಮಾಹಿತಿಗಾಗಿ ಸಂಪರ್ಕಿಸಿ: ಶ್ರೀ. ಸಿ.ರವಿಕುಮಾರ್, ದೂರವಾಣಿ ಸಂಖ್ಯೆ:

28524466/77 (306)/9343468270