

Mini Project Based Approach to Promote Entrepreneurship and Innovation in Engineering Education

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Abstract - Now days in India we experiencing many project sellers available and we can easily download project from internet in Computer Engineering or in other we easily get idea or report of the project. So if we implement this process properly we easily motivate students from the Mini project for entrepreneurship and innovation.

Key Words: ICT tools, online education, education, digital education etc.

1. INTRODUCTION (Size 11 , cambria font)

The engineering design process is a specific set of steps engineers use to organize their ideas and refine potential solutions to engineering challenges. Embarking an engineering design project is much more than simply describing the project; engineers must gain an understanding of all the issues surrounding a particular design challenge. These issues might include the need for the project, relevant social and economic conditions of the target population, and project constraints and requirements. Working through these non-technical contextual factors helps engineers generate useful, appropriate and successful design solutions [1].

Above information seems very impressive but reality is far away in India for engineering students. Projects means just buy the project from any seller and submit the same in colleges. But if we change this process, motivate the students project implementation really became a important factor for Entrepreneurship and Innovation.

Now days, in India many times we here about the Engineering Students every year thousands of students completing their Engineering from every state but among these engineers very few are employable. Why this situation arises because of lack of motivation and proper implementation. In this paper we discuss about the minor project implementation process, result and limitation.

Session 2 describes about General Process of Minor Project implementation, Session 3 discussed solution for minor project process problems, Session 4. Shows result and feedback of advance process, Session 5. Discussed few projects implemented by students and finally conclude the paper.

2. GENERAL PROJECTS OF MINOR PROJECT IMPLEMENTATION

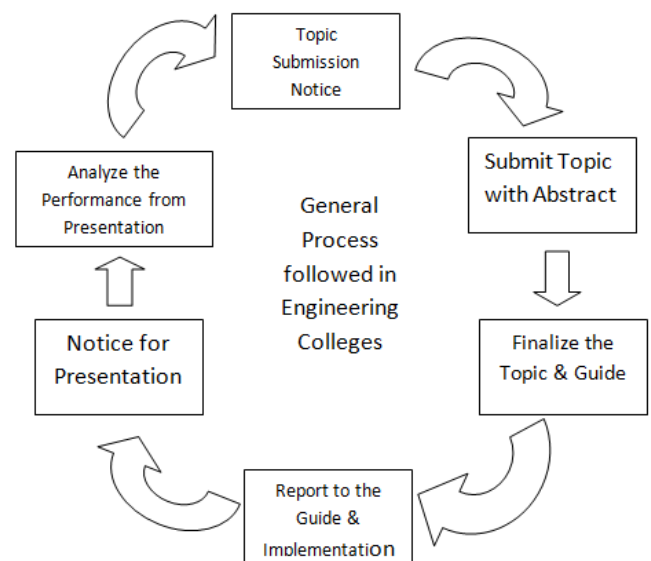


Fig. 1 General Process for Project Implementation

The above diagram shows the general process that followed in India for minor project implementation.

- Step 1: Minor project coordinator display notice for minor project submission.
- Step 2. Student submitted topic and coordinator finalize the topic.
- Step 3. Project guide and selected topic list displayed on notice board.
- Step 4. Report to the Guide and take a guidance for implementation.
- Step 5. Notice for presentation schedule.
- Step 6. Students present their minor project in front of panel member and get a marks as per their performance.

In India maximum engineering college follow the same process. But there is no problem with this process but because of students are not interested, they consider it as work or burden they cannot learn from the important activity.

But if the same thing we implemented different way students get motivated to implement for project. As I survey 85% students download their project from the internet and the present the same project GUI in front of panel member. And because of that from this important activity they does not learn anything.

- Problem Come to know from above discussion:
 - Students get the project from internet very easily, since they are not interested to work hard.
 - They reluctant-ant to learn new language because of lack of motivation and higher languages not covered in syllabus very detail.
 - No proper guidance because of lack of time from both side teacher as well as students.

3. SOLUTION FOR MINOR PROJECT PROBLEMS

Motivation is a theoretical construct used to explain behavior. It represents the reasons for people's actions, desires, and needs. Motivation can also be defined as one's direction to behavior, or what causes a person to want to repeat a behavior and vice versa [3] A motive is what prompts the person to act in a certain way, or at least develop an inclination for specific behavior. According to Maher and Meyer[3], "Motivation is a word that is part of the popular culture as few other psychological concepts are Motivation plays important role in our life. The same thing we can use here, in our college we change the traditional process for minor project. In our college we have implemented the same task in different way. [2]

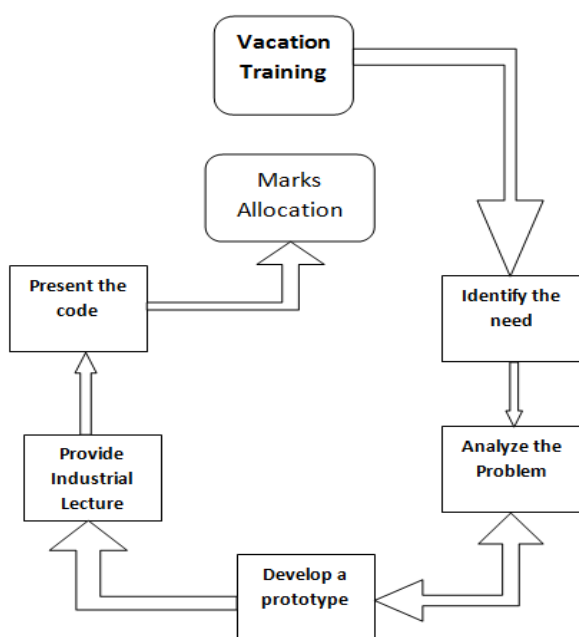


Fig. 2: Advance process for Minor Project implementation

- Step 1. Without proper training it might not have successful. So first step is to provide training in vacation for different computer languages.
- Step 2. Students need to identify the needs of society and submit the minor project title as a need. But with their abstract they have to write a answer for these different question.

Example:

1. What are some problems and/or needs in society today?
2. Who specifically experiences this problem? (Example: Farmer, business man, in school, college)
3. How to develop/ Possible solution
4. Evaluate alternative and select most promising solution

- Step 3. Student has to analyse the real problem and find out alternative solution. (* It come after discussion with all project team member and project guide)
- Step 4. Students have to construct a prototype.
- Step 5. Provide industrial lectures, help if students required. (* from Second Year students learn different languages in college vacation)
- Step 6. Implement actual project and present a code in front of panel member instead of GUI.
- Step 7. Students get marks as per their knowledge of programming, problem solving and presentation.

4. RESULT AND FEEDBACK

This year we have implement the same process on 5 project group to check effectiveness of this process. And we are very happy to announce that we gets very good results from the students.

- Step 1. For these students we have provided courses like Android, Java, .net, software testing etc. in vacation.
- Step 2. Students find out the various activity in department, that they can automate. Respective teacher allocated as a guide so that they can properly implement the project and faculty can use this project.

* Here project guide works as a customer. Students gather requirements from the allocated teacher.

- Step 3. They discuss possible alternative with the teacher and finalize one solution.
- Step 4. Develop a prototype and allocate teacher finalize the prototype.
- Step 5. Successfully implement the project.

After project completion, we took a feedback from the students.

❖ Advantages of this process:

- Students enjoy their work, because they feel they are helping society. Their project really going to use somewhere.
- Students get inner satisfaction and get motivation
- Help available through allocated teacher, whenever required.
- Practically understand the Software Development Life Cycle and Software Testing Life Cycle.
- Students get motivation to start own enterprise who solve various problems of the society.

❖ **Feedback:**

We take feedback from the selected students and remaining students we got a big difference in their project understanding and promoting towards entrepreneurship

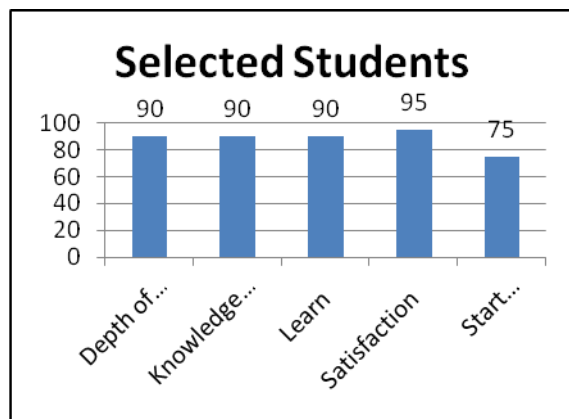


Fig. 3 Feedback from selected students

Also we have taken feedback from the other students those who have not participated in the advance process.

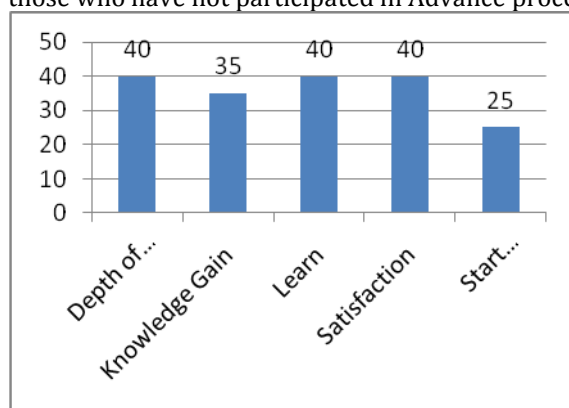


Fig. 4 Feedback from remaining students

5. SELECTED STUDENTS IMPLEMENTED PROJECTS

Following different projects implemented by our students using an advanced minor project selection & implementation process.

- 1 Training & Placement Management System
- 2 Online Examination System in Java (Client/Server Based)
- 3 Leave Management System
- 4 Absent Student Management with SMS System\
- 5 Online Exam Conduction & Assessment using ASP.NET
- 6 Staff Information Portal
- 7 Internal Sectional Examination Analysis Information System
- 8 Design And Development of mobile campus and android base mobile Application for university campus tour guide.
- 9 Student audit point system
- 10 Online Attendance Management System
- 11 Application for automatic time table generation
- 12 Dynamic Web Site for Department
- 13 Online Address Book
- 14 Result Analysis System
- 15 Canteen Organization Information System

❖ About implemented projects:

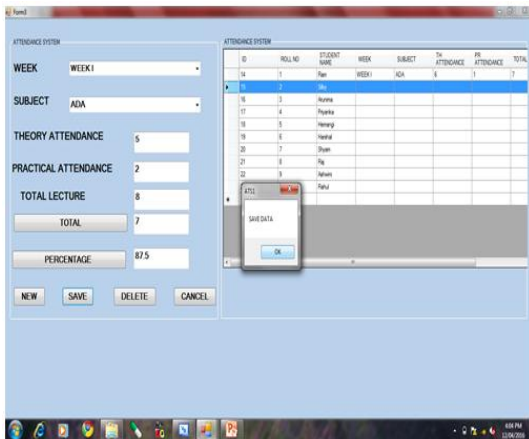
1. **Absent Student Management with SMS system:**

Managing student absentee by informing their parents with the help of message. According to our institute rules, if a student were absent in lecture then a message is sent to his parent for informing their student absentee.



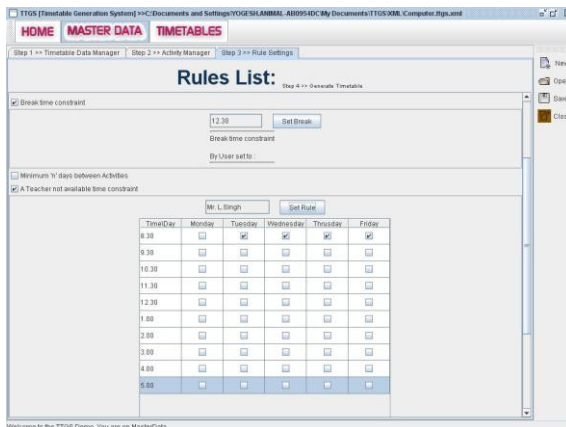
2. Attendance Management System

It is hassle for teacher to make analysis of attendance data manually and ensure no error prone in that process. This study proposes to develop a web based application, Attendance Management System (AMS) to solve this problem.



3. Automatic time table generation system

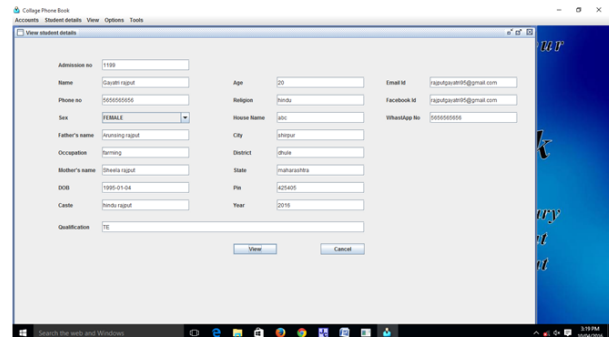
A college timetable is a temporal arrangement of a set of lectures and class rooms in which all given constraints are satisfied. Creating such timetables manually is complex and time-consuming process. By automating this process with computer assisted timetable generator can save a lot of precious time of administrators who are involved in creating and managing course timetables.



4. College Phone Book:

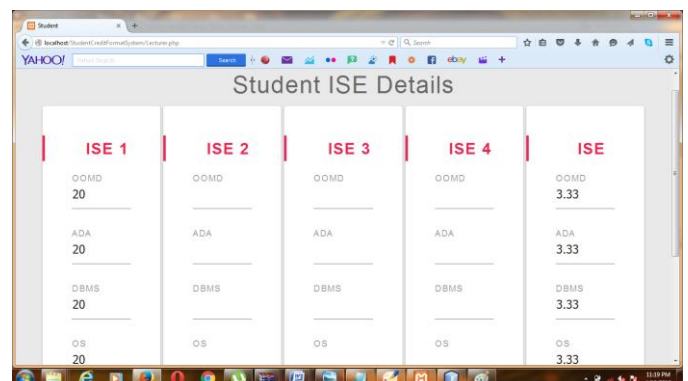
College phone book project is about storing the information or details of each individual student studying in their respective departments, which

displays the name of the student, phone number of each individual student.



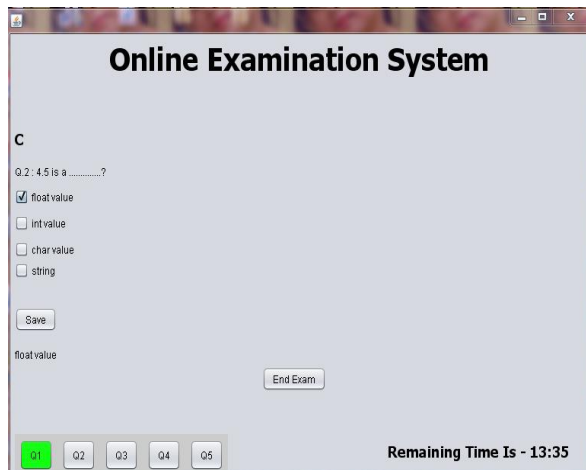
5. ISE Analysis Report

ISE test has been an integral part of college, to test the student curriculum and to calculate the marks formal result. But as per the manual system of entering marks is being the hectic for lecturers as one has to attend a load of students with each having 4 to 5 subject marks to enter. This led to the way where one has to automate the system for each student and calculate the marks automatically.



6. Online Examination System:

Online Exam System is very useful for Educational Institute to prepare an exam, save the time that will take to check the paper and prepare mark sheets. It will help the Institute to testing of students and develop their skills.



Few project I have discussed here to proof of concept. The above process we come to know that students feel they are not only employable they can start their own entrepreneurship.

6. CONCLUSIONS

From second year engineering students should get motivated for entrepreneurship. It helps to improve quality education in India, to get good result in 'Make in India' and to solve employability problem. Our college has taken a first step to impart student's skill towards solving real life problem through advance process. In this year we have implemented for few students and we received good results.

REFERENCES

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