

MES's Pillai College of Engineering, New Panvel

**A REPORT ON
PROJECT BASED LEARNING (PBL)**

**Academic Year 2017-2018 (Semester V)
Third Year Undergraduate Students of**

Computer Engineering Department

Objective—To enable the students to apply concepts of the present semester subjects (including those of previous semesters) in the form of a design project based on certain application. It is hoped that it shall eventually lead to a better learning experience as opposed to textbook learning. Separate topics are assigned to all students in groups (maximum 4-6 students per group) of the same year to enable healthy competition among the different teams. The students work in groups and assign and distribute various aspects of work so as to realize the project based on a timeline of about 2 to 3 months. Queries and doubts are clarified by interactions with the PBL coordinators and subject experts. Student groups submit the PBL report during their demonstrations on a specified date in front of the faculty members.

Judges for the PBL Demonstrations

All Computer and IT Engineering Faculty of the concerned class.

PBL Coordinators

Division A	Prof. Deepti L
Division B	Prof. Rakhi M

PBL Topics:

#	Topic	Description
1	Library Book Tracking System	Searching a book in a library is always a big and tedious task. One needs to know the proper lane, rack number and exact position of the book. To identify this software can be developed which can direct you to the exact location of the book. To facilitate fast retrieval, software has to be developed using multiple threads running simultaneously. The software should display virtual environment and guide you with the route to reach the book.
2	Lab power management System(Based on TT & noise sensor)	Electricity is an exhaustible resource and it's a social responsibility of everyone to SAVE ELECTRICITY. Lot of energy is consumed in labs. Whenever labs are free and no students are utilizing resources, systems, tube lights and fans should be switched off. Software can be developed to monitor the presence of students in the lab, which can be done by analyzing the time table for a particular lab. Further the software can be enhanced by using noise sensor to sense the noise level present in the lab. Accordingly the e-mail and SMS should be sent to the respective lab assistant.
3	Smoke alarm using 8086	Often we find that residential properties, offices, buildings etc suffer disastrous consequences due to a single short circuit or a simple fire which go undetected. To avoid such losses, one can make use of a smoke alarm which would in turn inform the concerned authority by sounding a buzzer or a sound as soon as any smoke is detected thereby avoiding danger as soon as it is detected. Smoke alarm circuits today are used everywhere from residential buildings to offices.
4	Intelligent Vehicle parking System	Finding a vehicle parking place at parking area of shopping malls or commercial buildings or airports etc... is always a hectic and time consuming activity. Software can be developed which displays available parking slots automatically at the entrance. A person has to reserve the available parking slot for temporary period by providing the details like mobile number and vehicle registration number. While leaving the parking area person has to release the parking slot by entering the same details. For security purpose for entry and exit person should receive SMS on the provided mobile number. Consider the scenario if two persons sending the request at the same time to reserve available parking slot; therefore to prevent a race condition on the parking slot use a basic mutex lock when updating parking slots.
5	TCP/IP monitoring system for security of lab(lab maintenance)	In a lab we can keep track if any malicious activity is going on through any computer system. This can be captured by

		analyzing ongoing packets from client to server. Software can be developed to do this and then inform the lab assistant via E-mail and SMS. The software can also identify some networking issues for maintenance of the lab.
6	Automatic Eligibility calculating system	Software can be developed which collects all the data of students stored into flat files related to their results. This data should be analyzed to find eligibility of student for entering in next academic year. File accessing is permitted only through file handling system call.
7	Control your Light System Using Smart Phone	The project idea is to prove that you can control your home lighting system using only your smart phone, so the LEDs in the project can represent different systems in our home as an example.
8	Arduino Based Distance Sensor	Arduino based distance sensor uses 2 sensors along with Arduino. The two sensors are infrared proximity sensor and ultrasonic range finding sensor. The IR sensor has a light source, which bounces the infrared light from the objects to the sensor. The ultrasonic range finder sensor produces the high frequency sound waves and calculates the echo time, to determine the distance.
9	Home automation	The home automation circuit is built around an Arduino Uno board, Bluetooth module HC-05 and a 3-channel relay board. The number of channels depends on the number of appliances you wish to control. Arduino Uno is powered with a 12V DC adaptor/power source. The relay module and Bluetooth module can be, in turn, powered using a board power supply of Arduino Uno. Bluetooth module used in this project is HC-05 (Fig. 4), which supports master and slave mode serial communication. Using these features it can communicate with other Bluetooth-enabled devices like mobile phones, tablets and laptops.

Photos:



Winners List:

TE COMP A	
A	Topic : Library Book Tracking System
	Shweta Achary
	Bhargavi Acharya
	Ketaki Barde
	Inderjeetsingh Bhatti
	Methu Damodaran
B	Topic : Intelligent Vehicle Parking System
	Brijesh V. Giri
	Shrey Jakhmola
	Justin James
	Neeraj Koli
	Rishab Koul
C	Topic : Control your Light System Using Smart Phone
	Saumitra Kulkarni
	Megha Menon
	Jisha Nair
	Nikhil Nair
	Rahul Nair
D	Topic : Intelligent Vehicle Parking System
	Prathamesh Patade
	Poornima Patil
	Aditya Mahajan
	Uzma Naik
	Deeksha Kumbla
E	Topic : TCP/IP monitoring system for security of lab(lab maintenance)
	Dakshana Rathod
	Divyam Solanki
	Anirudh Nair

TE COMP B

A	Topic : Home Automation
	Swati Nair
	Shravan Nambiar
	Jeet Navadhare
	Karishma Netake
	Fenny Zalavadia
B	Topic : Light Controlling System Using Smart Phone
	Rohan Mudliar
	Padmesh Gadge
	Rohith Nair
	Jobin George
C	Topic : Library book tracking system
	Rohit Pillai
	Reuben Reji
	Sharan Rai
	Rammohan
	Pranav Parab
D	Topic : Home Automation
	Karan Shah
	Sayoojya Dinesan
	Shreya Jayachandran
	Saloni Soniminde
	Sanika Tamhankar
E	Topic : Intelligent Vehicle Parking System
	Apurva Tamhankar
	Sruthi Suresh
	Pranay Sharma
	Rohini Stanly
	Anamika Sanap

Photo of certificate distribution :

