**Project Based Learning-II**

(Guidelines and Work Book)

**Course Code: 210258**

**(2019 Course)**

**Second Year Engineering**

Year: 2021 - 2022

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Group ID:

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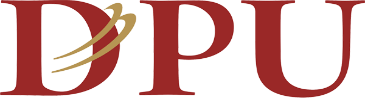
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Project Title : **Buddy for Hostellers**

Name of Mentor **: Mrs. Vanita Kshirsagar, Mrs. Shubhangi Vairager**



**DEPARTMENT OF ARTIFICIAL INTELLINENCE AND DATA SCIENCE**

## DR. D. Y. PATIL INSTITUTE OF TECHNOLOGY, PIMPRI, PUNE

## SAVITRIBAI PHULE PUNE UNIVERSITY

## 2021 - 2022

**Preamble**

For better learning experience, along with traditional classroom teaching and laboratory learning; project-based learning has been introduced with an objective to motivate students to learn by working in group cooperatively to solve a problem, Project-based Learning (PBL) is a student centric pedagogy that involves a dynamic classroom approach in which it is believed that students acquire a deeper knowledge through active exploration of real-world challenges and problems. Students learn about a subject by working for an extended period of time to investigate and respond to a complex question, challenge or a problem. It is a style of active learning and inquiry-based learning. (Reference: Wikipedia). Problem based learning will also redefine the role of teacher as mentor in learning process. Along with communicating knowledge to students, often in a lecture setting, the teacher will also to act as an initiator and facilitator in the collaborative process of knowledge transfer and development.

This is a recommended workbook for PBL that will serve the purpose and facilitate the job of students, mentor and coordinator. This workbook will reflect accountability, punctuality, technical writing ability and work flow of the work undertaken.

**CERTIFICATE**

This is to certify that Mr./ Ms. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Group No. **01** Branch **Artificial Intelligence and Data Science** has successfully completed the work associated with **Project Based Learning II (210258**) titled as **Buddy For Hostellers** and has submitted the work book associated under my supervision, in the partial fulfillment of Second Year Bachelor of Engineering (Choice Based Credit System) (2019 course) of Savitribai Phule Pune University.

Date:

Place: Pimpri

Guide Head Principal

(Name & Sign) (Name & Sign) (Name & Sign)

**Table of Contents**

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **Description** | **Page No.** |
| **1.** | Preamble | 2. |
| **2.** | Certificate | 3. |
| **3.** | Project Based Learning Syllabus | 5. |
| **4.** | Recommended Guidelines and Phases | 7. |
| **5.** | Evaluation and Continuous Assessment Sheet | 8. |
| **6.** | Project Information Sheet | 9. |
| **7.** | Assessment Remarks Sheet | 10 |
| **8.** | Project Monitoring (1 sheet per week) | 12 onwards |

**1. Project Based Learning Syllabus:**

**Course Objectives:**

1. To emphasize learning activities that is long-term, interdisciplinary and student-centric.
2. To inculcate independent learning by problem solving with social context.
3. To engages students in rich and authentic learning experiences.
4. To provide every student the opportunity to get involved either individually or as a group so as to develop team skills and learn professionalism

**Course Outcomes:**

CO1: Project based learning will increase their capacity and learning through shared cognition.

CO2: Students able to draw on lessons from several disciplines and apply them in practical way.

CO3: Learning by doing approach in PBL will promote long-term retention of material and replicable skill, as well as improve teachers' and students' attitudes towards learning

**Group Structure:**

Working in supervisor/mentor – monitored groups. The students plan, manage and complete a task/project/activity which addresses the stated problem.

* There should be team/group of 5 -6students
* A supervisor/mentor teacher assigned to individual groups

**Selection of Project/Problem:**

The problem-based project-oriented model for learning is recommended. The model begins with the identifying of a problem, often growing out of a question or “wondering”. This formulated problem then stands as the starting point for learning. Students design and analyze the problem within an articulated interdisciplinary or subject frame. A problem can be theoretical, practical, social, technical, symbolic, cultural and/or scientific and grows out of students’ wondering within different disciplines and professional environments. A chosen problem has to be exemplary. The problem may involve an interdisciplinary approach in both the analysis and solving phases. By exemplarity, a problem needs to refer back to a particular practical, scientific, social and/or technical domain. The problem should stand as one specific example or manifestation of more general learning outcomes related to knowledge and/or modes of inquiry. There are no commonly shared criteria for what constitutes an acceptable project. Projects vary greatly in the depth of the questions explored, the clarity of the learning goals, the content and structure of the activity.

* A few hands-on activities that may or may not be multidisciplinary
* Use of technology in meaningful ways to help them investigate, collaborate, analyze, synthesize and present their learning.
* Activities may include-Solving real life problem, investigation /study and Writing reports of in depth study, field work.

**Assessment:**

The institution/head/mentor is committed to assessing and evaluating both student performance and program effectiveness. Progress of PBL is monitored regularly on weekly basis. Weekly review of the work is necessary. During process of monitoring and continuous assessment AND evaluation the individual and team performance is to be measured. PBL is monitored and continuous assessment is done by supervisor/mentor and authorities. Students must maintain an institutional culture of authentic collaboration, self-motivation, peer-learning and personal responsibility. The institution/department should support students in this regard through guidance/orientation programs and the provision of appropriate resources and services. Supervisor/mentor and Students must actively participate in assessment and evaluation processes.

Group may demonstrate their knowledge and skills by developing a public product and/or report and/or presentation.

* Individual assessment for each student (Understanding individual capacity, role and involvement in the project)
* Group assessment (roles defined, distribution of work, intra-team communication and togetherness)
* Documentation and presentation

**Evaluation and Continuous Assessment:**

It is recommended that the all activities are to be record and regularly, regular assessment of work to be done and proper documents are to be maintained at college end by both students as well as mentor (you may call it PBL work book).

Continuous Assessment Sheet (CAS) is to be maintained by all mentors/department and institutes. Recommended parameters for assessment, evaluation and weightage:

* Idea Inception (5%)
* Outcomes of PBL/ Problem Solving Skills/ Solution provided/ Final product (50%) (Individual assessment and team assessment)
* Documentation (Gathering requirements, design & modeling, implementation/execution, use of technology and final report, other documents) (25%)
* Demonstration (Presentation, User Interface, Usability etc.) (10%)
* Contest Participation/ publication (5%)
* Awareness /Consideration of -Environment/ Social /Ethics/ Safety measures/Legal aspects (5%)

PBL workbook will serve the purpose and facilitate the job of students, mentor and project coordinator. This workbook will reflect accountability, punctuality, technical writing ability and work flow of the work undertaken.

**References:**

* Project-Based Learning, Edutopia, March 14, 2016.
* What is PBL? Buck Institutes for Education
* [www.schoology.com](http://www.schoology.com)
* [www.wikipedia.org](http://www.wikipedia.org)
* [www.howstuffworks.com](http://www.howstuffworks.com)

**2. Recommended Guidelines and Phases:**

PBL is learning through activity. One of the teachers can be appointed as coordinator for PBL. Following are the recommended guidelines that will work as an initiator and facilitator in process of completion of PBL.

1. In first week of commencement of 2nd semester or preferably at the end of first semester let the coordinator create awareness about PBL (what, why, and how) among the students. Convey students expected outcomes, assessment process and evaluation criteria.
2. Get groups of students registered preferably 4-6 students per group.
3. Assign mentor to each group.
4. Provide guidelines for title identification (Problem can be some real-life situation that needs technology solutions. This situation can be identified by meeting people around, visiting various industries, society, and institutes. The solution can be prototype, model, convertible solutions, survey and analysis, simulation, and similar).
5. Let students submit the problem identified in prescribed format (Title, Problem statement, details of a problem undertaken, and what is need of solution to the problem)
6. Coordinator and mentor can approve the problem statements based on feasibility and learning outcomes expected for first year engineering students
7. Mentor is to monitor progress of the task during phases of project work. Broadly phases may include- requirements gathering, preparing a solution, technology design for the solution. (Optional phases- implementation and testing)
8. Weekly monitoring and continuous assessment record is to be maintained by mentor.
9. Get the report submitted at the end of semester.

**3.** **Evaluation and Assessment Sheet (**To be filled in my mentor**)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr. No.** | **Details** | **Maximum Marks** | **Marks Obtained** |
|  | Problem Identification  (Idea Inception) | **10** |  |
|  | Problem Analysis  (Requirement Gathering) | **15** |  |
|  | Proposed Solution Model/Design/ Process / prototype | **20** |  |
|  | Technology Solution Model | **15** |  |
|  | Expected Outcomes | **05** |  |
|  | Implementation and Testing | **10** |  |
|  | Regularity (Attendance + Weekly Progress Reporting) | **10** |  |
|  | Awareness /Consideration of -Environment/ Social /Ethics/ Safety measures/Legal aspects | **05** |  |
|  | Contest Participation/ publication | **05** |  |
|  | Report | **05** |  |
| **Total Marks** | | **100** |  |
| **Date:**  **Name & Sign of Mentor** | | | |

**4. Project Information Sheet**

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| Project ID | 01 | | | | |
| Title | **Buddy For Hostellers** | | | | |
| Problem Statement | Create a heart disease prediction system using machine learning where diseases are predicted by the machine learning algorithm on the basis of the symptoms provided by the user. | | | | |
| Name of Mentor | Mrs. Shubhangi Vairagar | | | | |
| Group Members | Division | Roll No. | Name | Mobile Number | Email ID |
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**5. Continuous Assessment and Remarks Sheet**

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| **Problem Identification (Idea Inception) –**   * As we have seen today, many students leave their home town to study, but what happens is that they don’t have proper knowledge of that place where they are going so they struggle to find hostel, rooms or mess services. * If they can able to find this but they get cheated by hostel, room or mess providers. * As they are new to that place so they don’t have list of hostels, mess or rooms nearby him/her   So that they cannot compare and find best option for their mess, hostel or rooms. |
| **Problem Analysis (Requirement Gathering) –** IntroductionThere are many students/bachelor who come from different cities for higher studies or to work, who struggle to find space for living and good food. This application will provide a platform to those students/ bachelors to find best suitable solutions for their needs.**Problem Statement**Nowadays a lot of students come from outside the city for higher studies. As many of them are not familiar with the area, they face various issues like finding place for their living and good food in surrounding area. This is a major issue for them. There are many sites that provide the details of the nearby residential properties for rent, but they are not dedicated for student requires. Also the same issue is faced for the day to day meals of the students/ bachelors.**End Users**Hostel providerMess providerStudents**Project Scope**The Project scope is not limited to providing mess and hostels we generate the different application based on the proposed system in future application5. Overall description **Product Perspective**  * Buddy for hosteller’s application is android based application. * This application is for those users who struggling to find hostel as mess as they are not familiar with that place * This application provide user to find hostels and messes nearby him/her * In this application hostel and mess provider can sign up for to give details about their mess and hostels and students can access that details to see which hostel or mess is best for him/her.  **User classes and their characteristics****Hostel providers:** This user can provide information of their hostel. Like information of where is his/her hostel is located, price of hostel, facilities provided by their hostel and mess is available or not etc.   * **Mess Providers:**   This user can help in to provide details of their mess. Details provided by this user are:   * Where his/her mess located * Price for day or month * Delivery services is available or not * Facilities * Which type of food they provide * **Students:** * This user can search for hostel as mess by comparing all the searches related to his/ her convenience  **Operating environment**  * Any android device from android 4.4 minimum  **Assumption and dependency**  * Active internet connection should be there to use this application. * User should enter correct information so that students get proper details  External Interface Requirements **6.1 User Interfaces**   * **Front-end software**: XML. * **Back-end software**: Java * **Database**: Google Firebase   **6.2 Hardware Interfaces**   * Android Operating System   **6.3 Software Interfaces**   * **Operating system**: We have chosen Android operating system for its best support and user friendliness. * **Database**: To save the user records we have chosen Firebase database. * **Android studio**: To develop app * **JDK**: To get environment of java development   **6.4 Communication Interfaces**   * Our Project belongs to Android application by which we are connecting user and Local Server with request and response form.  System Features**Provide Hostel** This application will provide you a platform to find hostels easily by comparing different options and choice which option is best suited for you. **Provide mess** This application will provide you a platform to easily find mess service nearby your leaving area or hostel. **Easy to search and Comparison** This app will show you best suited hostel and mess according to your search and by using all search result provided by this app you can easily find your best mess/ hostel according to you budget or convenience. **User authentication** In this application we have added authentication for both hostel/mess provider and also for the students who want hostel/mess nearby him/her area. Due to this authentication app provide more security to user and user will stay happy to use this app. 8 Non-functional requirements **8.1 Performance Requirements**  For good performance, the system should be tuned to server only server process and most of the RAM should be used for our application.  **8.2 Safety Requirements**  For the safety purpose backup of the database must be required. To avoid illegal use of the system, while using this System.  **8.3 Security Requirements**  The system should be safe because we use the Android OS; with firewall system therefore the System should have proper security so that it cannot be hacked.  **8.4 Software Quality Attributes**  Application will satisfy following software quality attributes:   * **Correctness**: System is planned in such way that it will give most correct output. * **Reusable**: This software is reusable. * **Availability**: As the System is an Android Application it is always available and need of Android OS for its installation. Also system satisfies other quality attributes such as reliability, Data Integrity, maintainability and Scalability. |
| **Proposed Solution Model/Design/ Process / prototype –**    Fig. Architecture Diagram |
| **Technology Solution Model-** |
| **Expected Outcomes**- |
| Implementation and Testing- |
| Regularity (Attendance + Weekly Progress Reporting) – (To be filled by Teacher) |
| Awareness /Consideration of -Environment/ Social /Ethics/ Safety measures/Legal aspects-(To be filled by teacher) |
| Contest Participation/ publication-(To be filled by teacher) |
| Report –(To be filled by Teacher) |

**6**. **Project Monitoring/ Progress Information Sheets** (one sheet per week, 3-4 weeks sheet should be added)

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| **Week 1** |
| **Date: 10/02/2022** |
| **Current Work phase of project-**  **Domain Selection**   * A task has been given by the teacher to select different domains on the basis of the interest of the students. * The teacher instructed to select any one domain which students want to work upon their PBL project. * And also instructed to prepare a presentation based on the domain selection. |
| **Discussions Held**   * Our team leader has taken the First inter group discussion meeting based on the task given by the teacher. * We discussed lots of domain topics such as Android development, machine learning, artificial intelligence and data science, computer vision, IOT (Internet of Things), Block-chain-Technology, etc. * We found that our interest is towards the domain of android application development .   Android application is the most used application in this smartphones era. So we taken Android application development as a domain   * Hence, we decided to prepare our PBL project on the domain of android application development. * Each group has given his task to work upon the presentation. * Lastly, we prepared a presentation based on android application development domain and taken the rehearsal of the presentation one day prior. |
| **Progress till Date**     * We have to present the Presentation of Domain selection on 11th February. * All group members have explained the topics perfectly as decided in the meeting. * Finally, we successfully discussed the domain selection till the date of task completion. |
| **Remark**  **Sign of Mentor** |

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| **Week 2** |
| **Date: 14/02/2022** |
| **Current Work phase of project-**  **Topic Selection**:   * A task has been given by the teacher to select 4 different topics on the basis of the interest of the students. * The teacher instructed to select any one topic which students want to work upon their PBL project. * And also instructed to prepare a presentation based on the topic selection. |
| **Discussions Held**   * Our team leader has taken the second inter group discussion meeting based on the task given by the teacher. * We discussed lots of topics, among those topics we selected the 4 main topics which are- * **Android Application Development** * **Artificial Intelligence** * **Block Chain Technology** * We found that our interest is towards the topic of Android application development. * Hence, we decided to prepare our PBL project on the Android application. * Each group has given his task to work upon the presentation. * Lastly, we prepared a presentation based on the Android application development system and taken the rehearsal of the presentation one day prior. |
| **Progress till Date**     * We have to present the Presentation of Topic selection on 15th February. * All group members have explained the topics perfectly as decided in the meeting.   Finally, we successfully discussed the Topic selection till the date of task completion, and selected the topic of **Android application development.** |
| **Remark**  **Sign of Mentor** |

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| **Week 3** |
| **Date: 17/02/2022** |
| **Current Work phase of project-**  **Literature Survey**:   * A task has been given by the teacher to take the Literature survey based on the Buddy For Hosteller Android application. * The teacher instructed to visit IEEE website and The Google Scholar website to search and find out whether someone has implemented or worked upon such type of project. * And also instructed to prepare a google sheet which should be edited by all the group members. |
| **Discussions Held**   * Our team leader has taken the third-inter group discussion meeting based on the task given by the teacher. * A common google sheet has been created by the group leader and its access is given to all the group members. * Then, a short discussion meet has been taken by the group leader to discuss the tasks which are distributed among all. * The google sheet is divided into the four compartments, such as author/publisher name, problem statement, advantages and disadvantages. * All are instructed to perform this task during the lecture hours itself. |
| **Progress till Date**     * We have to present the Presentation on the literature survey. * All group members have explained the topics perfectly as decided in the meeting. * Finally, we successfully discussed the entire literature survey and also communicated with the teacher. |
| **Remark**  **Sign of Mentor** |

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| **Week 4** |
| **Date: 21/02/2022** |
| **Current Work phase of project-**  **SRS (Software Requirement Specification)**   * A task has been given by the teacher to create the Software Requirement Specifications based on   The Buddy for hostellers android application.   * The teacher instructed to describe the SRS among the following headings- * **Section :1.0**: - Discuses the scope and the purpose of the software. * **Section :2.0**: - Describe the overall functionalities and the constraints of the software and the user characteristics. * **Section :3.0**: - Explains features, external, functional and non-functional requirements of the system. * And also instructed to demonstrate/present the SRS to them. |
| **Discussions Held**   * Our team leader has taken the fourth inter group discussion meeting based on the task given by the teacher. * According to the guidance of the team leader, the SRS task is divided among all the five group members. * As the SRS contains lots of points which are interdependent on one another, the team has discussed and taken collaborative efforts for the creation of the SRS. * The team has communicated all the functionalities, modules and other non-functional requirements and wherever necessary team has taken discussion review with the teacher. |
| **Progress till Date**     * We have to present the SRS (Software Requirement Specification) to the teacher till the date decided. * All group members have explained the topics perfectly as decided in the meeting. * Finally, we successfully discussed the entire SRS (Software Requirement Specification) and also communicated with the teacher. |
| **Remark**  **Sign of Mentor** |

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| **Week 5** |
| **Date: 24/03/2022** |
| **Current Work phase of project-**  **Synopsis:-**   * A task has been given by the teacher to take the synopsis based on the Buddy for Hosteller Android application. * For this task mam given a format of synopsis so we followed that format to make that synopsis for our Buddy for Hosteller application * And also instructed to prepare a word document file which should be edited by all the group members. |
| **Discussions Held**   * Our team leader has taken the fourth inter group discussion meeting based on the task given by the teacher. * According to the guidance of the team leader, the Synopsis task is divided among all the five group members. * As the Synopsis contains lots of points which are interdependent on one another, the team has discussed and taken collaborative efforts for the creation of the Synopsis * For this activity we have distributed work of architecture diagram, literature survey, conclusion to all team members. * After all work is done by all team members, we have combined all to one word document. |
| **Progress till Date**     * We have to present the synopsis to the teacher till the date decided. * All group members have explained the topics perfectly as decided in the meeting. * Finally, we successfully discussed the entire Synopsis and also communicated with the teacher. |
| **Remark**  **Sign of Mentor** |
| **Week 6** | |
| **Date: 21/04/2022** | |
| **Current Work phase of project-**  **Architecture Diagram:**   * A task has been given by the teacher to make the Architecture Diagram based on the Buddy For Hosteller Android application. * Teacher instructed us to make architecture diagram and check its plagiarism so to insure that our architecture diagram is unique. | |
| **Discussions Held**   * Our team leader has taken the fourth inter group discussion meeting based on the task given by the teacher. * According to the guidance of the teacher, the architecture diagram task is divided among all the five group members. * As the Synopsis contains lots of points which are interdependent on one another, the team has discussed and taken collaborative efforts for the creation of the architecture diagram * After short discussion with team we have started to make system architecture diagram after making system architecture diagram we have started to check plagiarism of architecture diagram to ensure that we have made unique architecture diagram. * After plagiarism check of architecture diagram we got 100% uniqueness | |
| **Progress till Date**   * We have to show architecture diagram to the teacher till the date decided with plagiarism result. * All group members have explained the architecture diagram perfectly as decided in the meeting. * Finally, we successfully discussed the entire architecture diagram and also communicated with the teacher. | |
| **Remark**  **Sign of Mentor** | |

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| **Week 7** |
| **Date: 06/05/2022** |
| **Current Work phase of project-**  **Report Preparation:**   * A task is given by the teacher to make report of whole project. * In this task teacher given us one report format according to that format we have to make report on our project buddy for hostellers which is android based application * In this format all basic required things are given only we have to add black field like what we have done in 7 week, system requirement specification and introduction etc. |
| **Discussions Held**   * Our team leader has taken the inter group discussion meeting based on the task given by the teacher. * According to the guidance of the teacher, the Report making task is divided among all the five group members. * As the Report contains lots of points which are interdependent on one another, the team has discussed and taken collaborative efforts for the creation of Report. * We have distributed all report content to all team members so that we can easily prepare our report on project which is buddy for hostellers. * After Everyone’s part is done for report then we combined all the divided part into one word document which is format of report which was given by our teacher. * We have appended all the field of report by combining all things given by all team member. |
| **Progress till Date**     * We have to show report to the teacher till the date decided. * All group members have explained the report perfectly as decided in the meeting. * Finally, we successfully discussed the entire architecture diagram and also communicated with the teacher. |
| **Remark**  **Sign of Mentor** |

**Add Your Project Code and Output print screen. You have copy entire project code here and all output screens.**