**Alard Charitable Trusts**

**Alard College of Engineering and Management**

**Marunji| Pune| India**

**(Affiliated to Savitribai Phule Pune University, Pune)**

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PROJECT WORK BOOK

For

Academic Year 2024-25

**Department of Computer Engineering**

# Project Work Book

## Academic Year: 2024- 2025 Department: Computer Engineering Group/Project ID: 09

**Team Members:**  1) Gagde Vyankatesh Narsing

2) Sahare Aneesh Vijay

3) Vatane Sanket Namdev

4) Yadav Rahul Indradev

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## Project Title: EV Charging Station Slot Booking.

**Broad Area of the Project: Smart Mobility and Intelligent Transportation Systems**

The project aims to modernize electric vehicle infrastructure through technology. It involves **mobile and web application development** for user-friendly booking and management. The solution promotes **sustainable technologies** by supporting the adoption of electric vehicles and potentially integrating renewable energy sources. It can be efficient slot allocation and energy management. Additionally, the project leverages to ensure scalability, reliability, and centralized control over bookings and station data.



Prof. Sujata Gaikwad

**Name and signature of Project Guide**

# General Instructions

* Students should enter the correct information in the work book.
* Get all entries verified by respective project guide. No changes are to be made without project guide’s permission.
* Students should report to their respective guides as per the schedule and its log is to be maintained in the work book.
* Follow all deadlines and submit all documents strictly as per prescribed formats.
* The work book should be produced at the time of all discussions, presentations and examinations.
* The work book must be submitted to project coordinator/ guide/ department / College after successful examination at the end of year.
* All documents and reports are to be prepared in a proper format as per the guideline by department.
* Submit hard as well as soft copy. Maintain one copy with each member.

# Preamble

The word *project* comes from the Latin word *projectum* from the Latin verb *proicere*, "to throw something forwards" which in turn comes from *pro-*, which denotes something that precedes the action of the next part of the word in time (paralleling the Greek πρό) and *iacere*, "to throw". The word "project" thus actually originally meant "something that comes before anything else happens".

(Curtsey Ref- <http://en.wikipedia.org/)>

The Project is conceiving the idea and implementing it systematically by using the knowledge derived in the course of education mainly to innovate or facilitate.

Work involves, study the feasibility of the project, planning project, studying existing systems, tools available to implement the project and state of art software testing procedures and technology with use of case tools.

The group of Under Graduate students at Final Year students will undertake project over the academic year. Work involves study the feasibility of the project, planning project, studying existing systems, tools available to implement the project and state of art software testing procedures and technology with use of case tools, design is to be implemented into a working model (software or hardware or both) with necessary software interface as an executable package.

**Objectives**

* To Apply the knowledge for solving realistic problem
* To develop problem solving ability
* To Organize, sustain and report on a substantial piece of team work over a period of several months
* To Evaluate alternative approaches, and justify the use of selected tools and methods,
* To Reflect upon the experience gained and lessons learned,
* To Consider relevant social, ethical and legal issues,
* To find information for yourself from appropriate sources such as manuals, books, research journals and from other sources, and in turn increase analytical skills.
* To Work in TEAM and learn professionalism.

# Outcomes

Students are expected to know and be able to-

* Solve real life problems by applying knowledge
* Analyze alternative approaches
* Apply and use most appropriate one for feasible solution.
* Write precise reports and technical documents in a nutshell.

# Guidelines for Selection of Project Work

Project is one of the significant contributory team works that has to be completed with distinct impression. It is really very difficult to explore the domain of interest / research/ thirst area/ society need. In general one cannot figuratively define best project but still there are certain parameters on which we can gauge the quality of project work done. It will be better suited to go for well-defined and relatively safe projects that provide scope for demonstrating proficiency with a low risk of failure especially at Under Graduate level.

## General guidelines:

* Identifying domain, feasibility and usability of work.
* Project work is expected to involve a combination of sound background research (thorough study/ follow a line of investigation), and methodical implementation.
* The utility of project has to be emphasized. It is also acceptable to identify the discrepancies/ flaws in the existing system and work accordingly to rectify or improve. Understanding the way project will be materialized and progressed

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| University Syllabus of Project Work for Semester I & II **Savitribai Phule Pune University**  **Fourth Year of Computer Engineering (2019 Course)**  **410248: Project Work Stage I** | | |
| **Teaching Scheme:**  **Practical : 02 Hours/Week** | **Credit**  **02** | **Examination Scheme:**  **Presentation: 50 Marks** |
| **Course Objectives:**   * To Apply the knowledge for solving realistic problem * To develop problem solving ability * To Organize, sustain and report on a substantial piece of team work over a period of several months 1 * To Evaluate alternative approaches, and justify the use of selected tools and methods, * To Reflect upon the experience gained and lessons learned, * To Consider relevant social, ethical and legal issues, * To find information for yourself from appropriate sources such as manuals, books, research journals and from other sources, and in turn increase analytical skills. * To Work in TEAM and learn professionalism. | | |
| **Course Outcomes:**  On completion of the course, student will be able to–   * Solve real life problems by applying knowledge. * Analyze alternative approaches, apply and use most appropriate one for feasible solution. * Write precise reports and technical documents in a nutshell. * Participate effectively in multi-disciplinary and heterogeneous teams exhibiting team work, Inter-personal relationships, conflict management and leadership quality. | | |
|  | **Guidelines** |  |
| Project work Stage – I is an integral part of the Project work. In this, the student shall complete the partial work of the Project which will consist of problem statement, literature review, SRS, Model and Design. The student is expected to complete the project at least up to the design phase. As a part of the progress report of project work Stage-I, the candidate shall deliver a presentation on the advancement in Technology pertaining to the selected project topic. The student shall submit the duly certified progress report of Project work Stage-I in standard format for satisfactory completion of the work by the concerned guide and head of the Department/Institute.  The examinee will be assessed by a panel of examiners of which one is necessarily an external examiner. The assessment will be broadly based on work undergone, content delivery, presentation skills, documentation, question-answers and report.  **Follow guidelines and formats as mentioned in Project Workbook recommended by Board of Studies.** | | |

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| **Savitribai Phule Pune University** Fourth Year of Computer Engineering (2019 Course) **410256: Project Work Stage II** | | |
| **Teaching Scheme: Practical : 06 Hours/Week** | **Credit 06** | **Examination Scheme: Term Work: 100 Marks Presentation: 50 Marks** |
| **Course Objectives:**   * To follow SDLC meticulously and meet the objectives of proposed work * To test rigorously before deployment of system * To validate the work undertaken * To consolidate the work as furnished report. | | |
| **Course Outcomes:**  On completion of the course, student will be able to–   * Show evidence of independent investigation * Critically analyze the results and their interpretation. * Report and present the original results in an orderly way and placing the open questions in the right perspective. * Link techniques and results from literature as well as actual research and future research lines with the research. * Appreciate practical implications and constraints of the specialist subject | | |
| **Guidelines**  In Project Work Stage–II, the student shall complete the remaining project work which consists of Selection of Technology and Tools, Installations, UML implementations, testing, Results, performance discussions using data tables per parameter considered for the improvement with existing/known algorithms/systems and comparative analysis and validation of results and conclusions. The student shall prepare and submit the report of Project work in standard format for satisfactory completion of the work that is the duly certified by the concerned guide and head of the Department/Institute.  **Follow guidelines and formats as mentioned in Project Workbook recommended by Board of Studies.** | | |

**Undertaking by Students**

We, the students of B. E. (Branch) hereby assure that we will follow all the rules and regulations related to project activity for the academic year 2023-24. The Project entitled “EV Charging Station Slot Booking” will be fully designed/ developed by us and every part of the project will be original work and will not be copied/ purchased from any source.

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# Instructions Regarding Project Proposal and Finalization

* The project work may involve the designing a system/subsystem or upgrading / improving an existing system.
* The design is to be implemented into a working model (software or hardware or both).
* Group may come up with sponsored project. Sponsorship may not be in terms of money or resources. It might be in terms of just suggesting problem definition and associated guidance.
* Students shall collect the letter required for applying the Institute/Industries for the project sponsorship from project coordinator.
* Students shall share list of suggested projects, prominent domains and respective expert, whom they may contact for guidance, with Project Coordinator.
* Students shall contact respective faculty member along with synopsis for the guidance.
* Students shall meet Project Coordinator for project title registration and submit the synopsis.
* Synopsis must include project title, group members, sponsor details (if any), detailed problem definition, area, abstract, details of existing similar systems if any, scope of the project and software-hardware requirements.
* Sponsorship details include name of sponsoring authority, address, name of guide, sponsorship terms & conditions and respective documents certifying the same from authorities.
* A Panel of experts will approve the project group and title only after presentation. Presentation will cover details mentioned in the synopsis as above.

# Schedule of Project Work

**Semester I**

|  |  |  |
| --- | --- | --- |
| **Sr.**  **No.** | **Activity** | **Schedule** |
| 1 | Registration of Project groups |  |
| 2 | Submission of Project Synopsis |  |
| 3 | Project presentations for finalization of title |  |
| 4 | Finalization of projects & allotment of guide |  |
| 5 | Submission of final synopsis |  |
| 6 | First presentation about progress of project work (Review I) |  |
| 7 | Second presentation about progress of project work (Review II) |  |
| 8 | Submission of partial project report |  |
| 9 | Examination of Project part I |  |

# Semester II

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| --- | --- | --- |
| **Sr.**  **No.** | **Activity** | **Schedule** |
| 1 | Third presentation about progress of project work (Review III) |  |
| 2 | Forth presentation about progress of project work (Review IV) |  |
| 3 | Submission of final project report and work book |  |
| 4 | Examination of Project part II |  |

**Guidelines for review Process Semester I**

The group members are expected to present their work undertaken during the semester. Journey of development has to be rationally presented with thorough literature survey.

* Students are expected to deliver presentation covering Problem Statement, Motivation, objectives, Literature Review & prerequisite work to be undertaken for Project development (work would be done in Semester II) .
* In Project Review I, Students shall give outline of the project in prescribed format. The guide and expert panel shall perform evaluation as per the review sheet.
* In Project Review-II, students shall give presentation with respect to feasibility and scope of the work undertaken, requirement analysis & prerequisite work to be undertaken for Project development. The guide and expert panel shall perform evaluation as per the review sheet.

Note: After every review, students shall submit a brief report / presentation. The same shall be included in the project work book after verified and approved by the guide.

# Semester II

* In project Review III, students shall give presentation with respect to design and development of the project. The guide and expert panel shall perform evaluation as per the review sheet.
* In project Review IV, students shall give presentation with respect to model of project. The emphasis shall be given to testing and validation. The guide and expert panel shall perform evaluation as per the review sheet.

**Agenda Points:**

We choose one of the project topics related to **Smart Mobility and Intelligent Transportation Systems**. Our project name is EV Charging Station Slot Booking.

We discussed our topic with our guide and, they gave us some suggestion on the topic. We start to study more on finalized topic.

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Prof. Sujata Gaikwad

Signature of Project Guide

## Details of Weekly discussion with project guide

## Meeting No.: 1 Date: 20Th July 2023

## Agenda Points:

**Week 1-3: Research and Paper Selection**

We delved into the project domain to identify relevant research papers.

We shortlisted 8 research papers and presented them to Prof. Sujata Gaikwad for feedback.

Based on the research, we brainstormed potential topics related to the project and discussed the core problem statement.

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## Details of Weekly discussion with project guide

## Meeting No.: 2 Date: 25th july

## Agenda Points:

**Week 4: Publishing Our Survey Paper**

We considered the possibility of publishing a survey paper based on our chosen research area. Prof. Sujata Gaikwad provided valuable guidance on the process. She helped us understand how to properly format the paper to meet academic standards. Additionally, she explained the importance of impact factors in selecting where to publish and helped us evaluate the impact factors of various journals. She also advised us on the most suitable platforms for publishing our survey paper, ensuring it would reach the right audience and have the desired impact in our field.

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Prof. Sujata Gaikwad

Signature of Project Guide

## Details of Weekly discussion with project guide

## Meeting No.: 3 Date:29th July 2023

## Agenda Points:

**Week 5: "Documentation" Takes Flight!**

We successfully published our survey paper titled "Electric Vehicle Charging Station Booking Application" in IRE Journals under Prof. Sujata Gaikwad's mentorship.

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## Details of Weekly discussion with project guide

## Meeting No.: 4 Date: 3rd august 2023

## Agenda Points:

## Week 6: Diving into UML Diagrams

We discussed and reviewed various UML diagrams with Prof. Sujata Gaikwad to ensure a clear project blueprint. Class diagrams were analyzed in detail. Sequence diagrams were evaluated for accuracy. Use case diagrams were refined. This ensured a comprehensive and precise project plan.

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Prof. Sujata Gaikwad

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## Details of Weekly discussion with project guide

## Meeting No.: 5 Date:16th august2023

## Agenda Points:

## Weeks 7 & 8: Refining the Project Report and Presentations

We presented the project report to Prof. Sujata Gaikwad and received valuable feedback.

We meticulously reviewed the research paper content and ensured proper flow within the report and presentations.

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Prof. Sujata Gaikwad

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## Details of Weekly discussion with project guide

## Meeting No.: 6 Date:28th august 23

## Agenda Points:

**Week 9: Project Implementation Check-in**

We conducted a mid-point review of our project implementation to assess progress. Key milestones were evaluated. Areas needing improvement were identified. Adjustments were planned to ensure timely completion.

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Prof. Sujata Gaikwad

Signature of Project Guide

## Details of Weekly discussion with project guide

## Meeting No.: 7 Date: 30th august 23

## Agenda Points:

**Week 10: Publication Plans for the Implementation**

During our discussion, Prof. Sujata Gaikwad provided invaluable guidance on navigating the publication process for our project implementation paper. Together, we meticulously identified the requisite data requirements, ensuring a thorough and comprehensive approach. Her expertise has been pivotal in refining our strategy, laying a solid foundation for the paper's success. We deeply appreciate her support throughout this endeavor.

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Prof. Sujata Gaikwad

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## Details of Weekly discussion with project guide

## Meeting No.: 8 Date: 3rd September 2023

## Agenda Points:

**Weeks 11 & 12: Double Publication Success!**

Our research paper, "Electric Vehicle Charging Station Booking Application" received approval for publication in IRJET Journals.

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Prof. Sujata Gaikwad

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## Details of Weekly discussion with project guide

## Meeting No.: 9 Date: 10th september

## Agenda Points:

**Week 13: Building the Blackbook Content**

We collaborated closely with Prof. Sujata Gaikwad to finalize the project report content for the blackbook. Her expert guidance and insightful feedback were invaluable in refining our research and ensuring the report's accuracy and comprehensiveness. The collaboration significantly enhanced the quality of our work, and we extend our gratitude for her support

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Prof. Sujata Gaikwad

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## Details of Weekly discussion with project guide

## Meeting No.: 10 Date: 8th November 23

## Agenda Points:

**Week 14: Identifying and Mitigating Risks**

We proactively identified potential project risks and discussed risk management techniques with Prof. Sujata Gaikwad. Effective mitigation strategies were proposed. Key risks were prioritized. A detailed action plan was developed.

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Prof. Sujata Gaikwad

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## Details of Weekly discussion with project guide

## Meeting No.: 11 Date: 20Th July 2023

## Agenda Points:

**Week 15: A Thorough Project Review**

We reviewed the project implementation with Prof. Sujata Gaikwad, analyzing both its strengths and weaknesses.

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Prof. Sujata Gaikwad

Signature of Project Guide

## Details of Weekly discussion with project guide

## Meeting No.: 12 Date: 25th july

## Agenda Points:

**Week 16: Enhancing the Project Report**

We identified areas for improvement in the project report, including adding accuracy charts, incorporating test cases with criteria, and outlining future scope considerations.

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Prof. Sujata Gaikwad

Signature of Project Guide

## Details of Weekly discussion with project guide

## Meeting No.: 13 Date:29th July 2023

## Agenda Points:

**Week 17: Finalizing the Report**

We had a final discussion with Prof. Sujata Gaikwad to finalize the project report. Key points and suggestions were reviewed. Necessary revisions were identified. Deadlines were confirmed. The report is now ready for submission.

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Prof. Sujata Gaikwad

Signature of Project Guide

## Details of Weekly discussion with project guide

## Meeting No.: 14 Date: 3rd august 2023

## Agenda Points:

**Week 18: The Finishing Touches**

We reviewed the hard copies of our published papers and the blackbook, ensuring everything was polished and complete. Formatting was thoroughly checked. Content accuracy was verified. References were meticulously cross-checked. This ensured a flawless and comprehensive final submission.

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Prof. Sujata Gaikwad

Signature of Project Guide

# Contribution of the project work (Publications/Patent/Prizes)

**Publications**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr. No.** | **Title of the paper** | **Conference/ Journal** | **Place if Conference** |
| 1 |  |  |  |
| 2 |  |  |  |

# Patents

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| --- | --- | --- | --- |
| **Sr. No.** | **Title of the patent** | **Registration Number** | **Date of application** |
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**Prizes**

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| **Sr. No.** | **Name of the competition** | **Organizing institute** | **Prize** |
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