MINIPROJECT LOGBOOK

**(CSM501: Mini Project 2 A)**

GROUP MEMBERS

## **1. Ved Waje (64)**

## **2. Abhirat More (44)**

**3. Pranita Bannore (8)**

## **4. Harshita Lohana (38)**

Name of the Mentor:

**Prof. Mrs. Vidya Zope**



**Department of Computer Engineering**

# Vivekanand Education Society’s Institute of Technology,

**An Autonomous Institute affiliated to University of Mumbai**

# HAMC, Collector’s Colony, Chembur, Mumbai-400074

**University of Mumbai (AY 2024-25)**

# INSTITUTE VISION & MISSION

## **VISION:**

## To create a vibrant knowledge oriented environment with innovative teaching practices andto inculcate a tradition of socially conscious application of technology.

## **MISSION:**

* To inculcate a culture of value based education.
* To enthuse students to develop in an ambient environment of caring and of sharing information.
* To enable students to work towards excellence in their chosen field with a professional bent of mind.

# COMPUTER ENGINEERING DEPARTMENT

## **VISION:**

## To reach international standards by empowering students with Computing skills and cutting edge technology

## **MISSION:**

* To sustain excellence in teaching and research and create center of excellence
* To provide broad Educational and Research experiences through interdisciplinary and industrial collaboration programs.
* To prepare students to enter the world of computing and make them ready for productive employment in the public or private sectors, enhance their entrepreneurship skills and motivate them to pursue advanced degrees.

# PROGRAM EDUCATIONAL OBJECTIVES (PEO's)

|  |  |
| --- | --- |
| I | To provide students with a solid foundation in their core concepts of mathematical, scientific and computer engineering fundamentals required to comprehend, analyze and design solutions for real  life problems. |
| II | To inculcate in students, a balanced outlook with professional and ethical attitude, develop  effective communication skills, teamwork and leadership qualities with multidisciplinary approach. |
| III | To prepare students to excel in postgraduate programs through an excellent academic environment and make them ready for productive employment in the public or private sectors and provide  lifelong learning experience. |
| IV | To provide broad educational and research experience through interdisciplinary and industry  centric programs. |

**PROGRAM OUTCOMES (POs)**

|  |  |
| --- | --- |
| **Program Outcome**  **Code** | **Program Outcome Description** |
| PO1 | Basic Engineering knowledge: An ability to apply the fundamental knowledge in mathematics, science and engineering to solve problems in Computer engineering. |
| PO2 | Problem Analysis: Identify, formulate, research literature and analyze computer  engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and computer engineering and sciences |
| PO3 | Design/ Development of Solutions: Design solutions for complex computer engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental  considerations. |
| PO4 | Conduct investigations of complex engineering problems using research-based knowledge  and research methods including design of experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions. |
| PO5 | Modern Tool Usage: Create, select and apply appropriate techniques, resources and modern computer engineering and IT tools including prediction and modeling to complex  engineering activities with an understanding of the limitations. |
| PO6 | The Engineer and Society: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities  relevant to computer engineering practice. |
| PO7 | Environment and Sustainability: Understand the impact of professional computer engineering solutions in societal and environmental contexts and demonstrate knowledge  of and need for sustainable development. |
| PO8 | Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of computer engineering practice. |
| PO9 | Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings. |
| PO10 | Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give  and receive clear instructions. |
| PO11 | Project Management and Finance: Demonstrate knowledge and understanding of computer engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments. |
| PO12 | Life-long Learning: Recognize the need for and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change. |

# PROGRAM SPECIFIC OUTCOMES (PSOs)

|  |  |
| --- | --- |
| PSO1 | **Professional Skills** - The ability to develop programs for computer-based systems of  varying complexity and domains using standard practices. |
| PSO2 | **Successful Career** - The ability to adopt skills, languages, environment and platforms for  creating innovative career paths, being successful entrepreneurs or for pursuing higher studies. |

**STUDENT INFORMATION**

# Project Title: JetLagged-Prediction of Airline Flight Delay

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Student 1** | **Student 2** | **Student 3** | **Student 4** |
| **Roll No.** | 64 | 8 | 44 | 38 |
| **Name** | Ved Waje | Pranita Bannore | Abhirat More | Harshita Lohana |
| **Class with**  **Division** | D12A | D12A | D12A | D12A |
| **Contact No.** | 9082534992 | 9822269032 | 8369270284 | 8856800141 |
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| **Address** | 502 Bharat Sadan | 3B/5 Visava Heights Apt. | 1002, Signature Tower | 94, Rajcolddrinks house |
| CHSL. Naupada | Aundh | Tagore Nagar 1 | Budhwar Peth |
| Thane (W) | Pune | Vikhroli (E) | Opp. Dombivali Bank |
| 400602 | 411007 | 400083 | Karad-415110 |

**INSTRUCTIONS TO STUDENTS:**

1. The logbook must be submitted to the mentor or Co-Mentor for verification and evaluation of project activities at least once in a week.
2. Logbook duly signed by the guide must be submitted with a project report for evaluation at the end of semester to the department.

# DECLARATION

I declare that this project represents my ideas in my own words and wherever others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my project work. I promise to maintain minimum 75% attendance, as per the University of Mumbai norms. I understand that any violation of the above will be cause for disciplinary action by the Institute.

Yours Faithfully

* 1. Ved Waje (64)
  2. Abhirat More (44)

3. Pranita Bannore (08)

4. Harshita Lohana (38)

(Signature of Students)

# Letter of Acceptance

## I undersigned, **Prof. *Vidya Zope*** working in the Computer Engineering department, willing to guide the project titled JetLagged-Prediction of Airline Flight Delay

for the Mini Project 2 A Semester V respectively for the ***Academic Year 2024-25.*** The names of the students are:

**1. Ved Waje**

**2. Abhirat More**

**3. Pranita Bannore**

**4. Harshita Lohana**

**Mrs. Vidya Zope Mrs. Priya RL. Dr. Nupur Giri**

(Project Guide) (Mini Project Coordinator) (HOD Computer)

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**COURSE OUTCOMES**

|  |  |  |  |
| --- | --- | --- | --- |
| **CO**  **No.** | **COURSE OUTCOME** | **POs covered** | **PSOs**  **covered** |
| CO1 | Identify problems based on societal /research needs. | PO1, PO2,PO4 | PSO1,PSO2 |
| CO2 | Apply Knowledge and skill to solve societal problems in a group. | PO1,PO2,PO4,  PO5,PO6,PO8 | PSO1,PSO2 |
| CO3 | Develop interpersonal skills to work as a member of a group or  leader. | PO1,PO2,PO4, PO9,PO11 | PSO1,POS2 |
| CO4 | Draw the proper inferences from available results through theoretical/  experimental/simulations. | PO1,PO2,PO4, PO5,PO6,PO12 | PSO1,POS2 |
| CO5 | Analyze the impact of solutions in societal and  environmental context for sustainable development. | PO2,PO3,PO4, PO7,PO12 | PSO1,POS2 |
| CO6 | Use standard norms of engineering practices | PO1,PO2,PO4,  PO12 | PSO1 |
| CO7 | Excel in written and oral communication. | PO1,PO4,PO8,  PO9,PO10,PO12 | PSO1 |
| CO8 | Demonstrate capabilities of self-learning in a group, which  leads to lifelong learning. | PO1,PO2,PO4, PO12 | PSO1 |
| CO9 | Demonstrate project management principles during project  work. | PO1,PO2,PO4, PO11,PO12 | PSO1,POS2 |

**CO-PO-PSO MAPPING**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| CO1 | 1 | 2 | - | 2 | - | - | - | - | - | - | - | - | 1 | 1 |
| CO2 | 2 | 2 | - | 2 | 3 | 2 | - | 2 | - | - | - | - | 2 | 1 |
| CO3 | 1 | 1 | - | 2 | - | - | - | - | 3 | 3 | - | - | 1 | 1 |
| CO4 | 2 | 1 | - | 1 | 2 | 2 | - | - | - | - | - | 2 | 2 | 1 |
| CO5 | - | 2 | 1 | 2 | - | - | 3 | - | - | - | - | 1 | 1 | 2 |
| CO6 | 1 | 2 | - | 1 | - | - | - | - | - | - | - | 2 | 2 | - |
| CO7 | 1 | - | - | 1 | - | - | - | 3 | 2 | 2 | - | 1 | 1 | - |
| CO8 | 1 | 3 | - | 3 | - | - | - | - | - | - | - | 2 | 1 | - |
| CO9 | 1 | 1 | - | 2 | - | - | - | - | - | - | 2 | 2 | 1 | 2 |

# SCHEDULE FOR MINI PROJECT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date** | **Week** | **Contents** | **Remark** | **Guide Sign** |
| 18/07/24 | 1 | Finalizing topic and reading research papers |  |  |
| 24/07/24 | 2 | Searching for publicly available datasets to use. |  |  |
| 29/07/24 | 3 | Deciding which regressor model to use for prediction purpose |  |  |
| 2/08/24 | 4 | Starting with preprocessing the dataset and writing code to predict flight delay using LGBM regressor. |  |  |
| 8/08/24 | 5 | Hyper tuning the parameters using Bayesian Network to increase accuracy and reducing mean square error of our model. |  |  |
| 14/08/24 | 6 | Creating an API in flask to predict delay. |  |  |
| 19/08/24 | 7 | Starting with UI design in our application JetLagged and deciding the functionalities. |  |  |
| 23/08/24 | 8 | Deciding which API to use to fetch flight details required to predict delay. |  |  |
| 28/08/24 | 9 | Finalizing weather Api to fetch weather used as a parameter to predict delay |  |  |
| 17/09/24 | 11 | Adding Live Track feature to plot our desired flight based on its real time location. |  |  |
| 21/09/24 | 11 | Connecting our flask Api with frontend application to predict delay when user enters flight number. |  |  |
| 22/09/24 | 12 | Handling errors i.e. when user enters incorrect flight number or live data is not available during tracking. |  |  |

**PROGRESS/ATTENDANCE REPORT**

|  |  |
| --- | --- |
| Title of the Project: | |
| Group No.20 | **Ved Waje**  **Abhirat More**  **Pranita Bannore**  **Harshita Lohana** |
| Name of the Supervisor: | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sr.**  **No** | **Date** | **Attendance** | | | | **Progress/Suggestion** | **Mapping** | | |
| **1** | **2** | **3** | **4** | **CO** | **PO** | **PSO** |
| 1 | 18/07/24 | ✓ | ✓ | ✓ | ✓ | Finalizing topic |  |  |  |
| 2 | 24/07/24 | ✓ | ✓ | ✓ | ✓ | Reading research paper to get a deep idea on the topic. |  |  |  |
| 3 | 1/08/24 | ✓ | ✓ | ✓ | ✓ | Searching for available historical datasets and APIs to use. |  |  |  |
| 4 | 7/08/24 | ✓ | ✓ | ✓ | ✓ | Deciding preprocessing steps to apply and the regressor model to use. |  |  |  |
| 5 | 22/08/24 | ✓ | ✓ | ✓ | ✓ | Switching from Random Forest regressor to LGBM regressor. |  |  |  |
| 6 | 30/08/24 | ✓ | ✓ | ✓ | ✓ | Increasing accuracy of model by hyper tuning parameters. |  |  |  |
| 7 | 18/09/24 | ✓ | ✓ | ✓ | ✓ | Building API in flask to predict delay |  |  |  |
| 8 | 25/09/24 | ✓ | ✓ | ✓ | ✓ | Working on JetLagged application in flutter. |  |  |  |
| 9 | 27/09/24 | ✓ | ✓ | ✓ | ✓ | Adding live tracking feature in the application. |  |  |  |

Sign of the Supervisor

# EXAMINER'S FEEDBACK FORM

Name of External examiner: College of External examiner: Name of Internal examiner: Date of Examination: / /

No. of students in project team:

Availability of separate lab for the project: Yes / No

**Student Performance Analysis** (Put Tick as per your Observation)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Excellent (3) Very Good (2) Good (1) | | | | |
| **Sr. No.** | **Observation** | **(3)** | **(2)** | **(1)** |
| 1 | Quality of problem and Clarity |  |  |  |
| 2 | Innovativeness in solutions |  |  |  |
| 3 | Cost effectiveness and Societal impact |  |  |  |
| 4 | Full functioning of working model as per stated requirements |  |  |  |
| 5 | Effective use of skill sets |  |  |  |
| 6 | Effective use of standard engineering norms |  |  |  |
| 7 | Contribution of an individual’s as member or leader |  |  |  |
| 8 | Clarity in written and oral communication |  |  |  |
| 9 | Overall performance |  |  |  |

o Can the same mini project extend to next semester by adding new objectives/ideas? ( Yes/ No)

o If yes, suggest new Innovative Technique/Idea/ objectives related to this project.

### Signature of External Examiner Signature of Internal Examiner