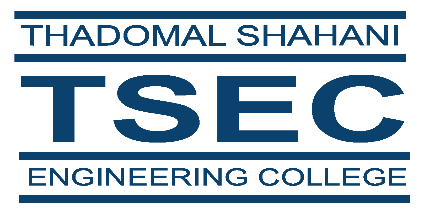
MINI-PROJECT LOGBOOK

GROUP MEMBERS

1. Drishti Bathija (06)
2. Harsh Bhatia (09)
3. Meet Brijwani (14)
4. Vinay Dawani (22)

Supervisor/Guide Dr. G T Thampi



Department of Artificial Intelligence & Data Science

**TSEC, Mumbai - 400 050**



**University of Mumbai**

(Academic Year 2023-24)

# INSTITUTE VISION & MISSION

## VISION:

Perpetuating and transcending the processes of:

* Contributing to evolving supply chain of human capital for National Economy
* Creating entrepreneurs and ‘game changers’ to support heightened level of economic activities underpinning ever increasing human aspiration
* Helping the Nation evolve as a total solution provider
* Value and wealth creation for the mankind

## MISSION:

Focusing and practicing:

* Product and processes innovation
* Leveraging human cognitive and behavioral science for creating instructional content
* Pervasive and ubiquitous Information Communication Technologies for customized content for learning
* Acknowledge and facilitate various learning styles and learning abilities
* Migrating from teaching paradigm to learning paradigm
* Every day discourse shall inculcate research culture and further the cause of societal advancement
* Understand various markets and cultures
* Collaborative learning and emotional integrity
* Sensitizing about opportunities in Energy, Education, Environment and Health care sectors
* Extensively promoting computer aided design, analysis and manufacturing procedures
* Theoretical rigor to develop conceptual clarity
* Modeling and design of experiments to inculcate culture of investigation
* Helping foot print on Project management and collaborative human endeavor
* Interdisciplinary studies and exposure to functional areas

# ARTIFICIAL INTELLIGENCE & DATA SCIENCE DEPARTMENT

**Vision:**

Transcending the process of integrating intelligence to Technology Products and Processes by architectural and algorithmic solution building procedures resulting in autonomous entities which shall surpass collective human intelligence

**Mission:**

1. Engage learners to develop competency in algorithmic approaches in resolving complexities of real time problems
2. Help pupils to develop competency in creative and architectural solution building processes for building efficiencies
3. Initiate the learners to intuitive / creative solution building processes as a complimentary skill set
4. Scaling up the process of creating digital learning content in the realm of AI & DS underpinning the theories of cognitive science and virtual / Augmented reality techniques
5. Design and create a supply chain of human capital with high degree of intellectual/ emotional and spiritual quotient to man the evolving National economies
6. Equip students with multi-disciplinary skill sets to offer solutions to real time problems through initiating them to the process of research and innovation
7. To create an academic environment for higher learning, lifelong learning, academic excellence, and research endeavours
8. Design ways and means of initiating learners to acquire high level of mathematical integrity and analytical competency
9. Training the learners to develop emotional integrity, interpersonal Intelligence, and intrapersonal intelligence to make them evolve as a Human capital for the society at large
10. Sensitising learners about sustainable development process, resilience of systems, and desirability of influencing the evolving world order to optimise wealth and value creation for the mankind

# PROGRAM EDUCATIONAL OBJECTIVES (PEO's)

|  |  |
| --- | --- |
| **PEO I:** | To create graduates committed to further the cause of information technology to enable enterprises to seize the massive opportunity emerging in IT services & IT product marketplace. |
| **PEO II:** | To build theoretical rigor, conceptual clarity in learners & engaging them to develop an attitude and temperament to be productive in workplace. |
| **PEO III:** | Help Learners to develop competency & skill sets in customizing software products in the niche/specialized areas like Big data Analytics, Artificial Intelligence, Deep learning& Block chain technologies. |
| **PEO IV:** | Help learners to develop competency in “Conversion of problem to logic” and in acquiring modelling & simulation skills. |
| **PEO V:** | Help them to develop environment consciousness build intellectual & emotional integrity & capacity to remain focused for a long time to achieved said goals. |

# PROGRAM OUTCOMES (POs)

|  |  |
| --- | --- |
| **PO's** | **OUTCOMES** |
| PO1 | Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.. |
| PO2 | Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences. |
| PO3 | Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations. |
| PO4 | Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. |
| PO5 | Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations. |
| PO6 | The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice. |
| PO7 | Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development |
| PO8 | Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the 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 the 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 life-long learning in the broadest context of technological change. |

**PROGRAM SPECIFIC OUTCOMES (PSOs)**

|  |  |
| --- | --- |
| PSO1 | The ability to Conceptualise, Formulate, Design, Analyse and Create solutions underpinning the knowledge of human cognition, Digital-Computational technologies, Artificial Intelligence and Data Science in terms of real-world problems to contribute to sustainable progress of mankind at large |
| PSO2 | The ability to apply knowledge of basic science, probability & statistics, and computational algorithms to carry out research to contribute the body of knowledge in the realm of computer science/ engineering and Artificial Intelligence & Data Science |

**STUDENT INFORMATION**

**Project Title: Solution of LPP(Linear Programming Problems) by dynamic programming**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Student 1** | **Student 2** | **Student 3** | **Student 4** |
| **Student ID** | 6 | 9 | 14 | 22 |
| **Name** | Drishti Bathija | Harsh Bhatia | Meet Brijwani | Vinay Dawani |
| **Class with Division** | SE S11 | SE S11 | SE S11 | SE S11 |
| **Contact No.** | 9320580700 | 9833064781 | 8793382012 | 8698202927 |
| **E-mail** | [drishtisunilbathija](mailto:drishtisunilbathija@gmail.com) | [harshbhatia618@gmail.c](mailto:harshbhatia618@gmail.c) om | [meetbrijwani@gmail.c](mailto:meetbrijwani@gmail.c) om | vinaydawani2200@gm ail.com |
| [@gmail.com](mailto:drishtisunilbathija@gmail.com) |
| **Address** | 203,Sukhmani Sagar Apt. | Building No. 32/A Wing, 601 | 401,Sheela Apt | 303,Surbhi Apt, |
| Behind Canara Bank | Opp Ganesh Udyan | Radhabai Chowk | Opp Dharamdas Darbar |
| Section-26 | Tilak Nagar, Chembur | Section-23 | OT section |
| Ulhasnagar-42100 4 | Mumbai - 400089 | Ulhasnagar-421003 | Ulhasnagar-421003 |

# INSTRUCTIONS TO STUDENTS:

1. The logbook must be submitted to the Guide or Co-Guide for veriﬁcation and evaluation of project activities at least once in a week.
2. Log book duly signed by guide must be submitted with 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 without plagiarism 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. Drishti Bathija 2. Harsh Bhatia 3. Meet Brijwani 4. Vinay Dawani

**(Date & Signature of Students)**

# Letter of Acceptance

I undersigned, Dr/Prof Himani Deshpande working in Artificial Intelligence & Data Science Department, willing to guide the project titled Solutions to LPP using dynamic programming

for the Mini-Project-1 (A & B) Semester III /IV respectively for the Academic Year 2022-23.

The names of the students are:

1. Drishti Bathija
2. Harsh Bhatia
3. Meet Brijwani
4. Vinay Dawani

**(Project Guide) (Mini-Project Coordinator) (HOD-AI & DS)**

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# COURSE OUTCOMES

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

**CO-PO-PSO MAPPING**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
| CO1 | 3 |  | 3 |  | 3 |  |  |  |  |  |  |  | 3 | 3 |  |
| CO2 | 3 |  | 2 |  |  |  | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 3 |  |
| CO3 |  |  |  |  | 2 |  |  | 2 |  |  | 3 | 3 | 3 | 2 |  |
| CO4 | 3 | 3 | 3 |  | 2 |  | 3 | 3 |  |  | 2 | 2 | 2 | 3 |  |
| CO5 |  |  | 3 |  |  | 3 | 3 |  |  |  | 2 | 2 | 3 | 3 |  |
| CO6 | 3 | 3 | 3 |  | 3 |  | 3 |  |  |  |  |  | 3 | 3 |  |
| CO7 |  |  |  |  |  |  |  |  |  | 3 | 2 | 3 | 1 | 1 |  |
| CO8 |  |  |  |  |  |  |  |  | 3 |  |  |  | 2 | 2 |  |
| CO9 |  | 3 |  | 3 |  |  |  |  |  |  |  |  | 3 | 3 |  |

# SCHEDULE FOR MINI PROJECT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date** | **Week** | **Contents** | **Remark** | **Guide Sign** |
| 02/08/2023 | 1 | First Meet Introduction to Mini-Project |  |  |
| 10/08/2023 | 2 | Gained theoretical knowledge about LPP |  |  |
| 12/08/2023 | 3 | Simplex Method |  |  |
| 15/09/2023 | 4 | Implemented Simplex Method for maximization problems |  |  |
| 17/09/2023 | 5 | Making it dynamic in terms of two variables |  |  |
| 26/09/2023 | 6 | Review 1 |  |  |
| 10/10/2023 | 7 | Implemented Simplex Method for minimization problems |  |  |
| 11/10/2023 | 8 | Making it dynamic for number of variables. |  |  |
| 13/10/2023 | 9 | Making it dynamic for number of constraints and type of inequalities |  |  |
| 15/10/2023 | 10 | Java Swing based GUI program |  |  |
| 25/10/2023 | 11 | Review 2 |  |  |

**PROGRESS/ATTENDANCE REPORT**

|  |  |
| --- | --- |
| Title of the Project: Solution of LPP(Linear Programming Problems) by dynamic programming | |
| Group No.15 | Name of Student 1:Drishti Bathija |
| Name of Student 2: Harsh Bhatia |
| Name of Student 3: Meet Brijwani |
| Name of Student 4: Vinay Dawani |
| Name of the Supervisor/Guide: Dr/Prof Himani Deshpande | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sr. No** | **Date** | **Attendance** | | | | **Progress/Suggestion** | **Mapping** | | |
|  |  | 1 | 2 | 3 | 4 |  | CO | PO | PSO |
| 1 | 08/08/22 | ✔ | ✔ | ✔ | ✔ | First Meet Introduction to Mini-Project |  |  |  |
| 2 | 22/08/22 | ✔ | ✔ | ✔ | ✔ | Gained theoretical knowledge about LPP |  |  |  |
| 3 | 30/08/22 | ✔ | ✔ | ✔ | ✔ | Simplex Method |  |  |  |
| 4 | 05/09/22 | ✔ | ✔ | ✔ | ✔ | Implemented Simplex Method for maximization problems |  |  |  |
| 5 | 12/09/22 | ✔ | ✔ | ✔ | ✔ | Making it dynamic in terms of two variables |  |  |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 6 | 19/09/22 | ✔ | ✔ | ✔ | ✔ | Review 1 |  |  |  |
| 7 | 26/09/22 | ✔ | ✔ | ✔ | ✔ | Implemented Simplex Method for minimization problems |  |  |  |
| 8 | 03/10/22 | ✔ | ✔ | ✔ | ✔ | Making it dynamic for number of variables. |  |  |  |
| 9 | 05/10/22 | ✔ | ✔ | ✔ | ✔ | Making it dynamic for number of constraints and type of inequalities |  |  |  |
| 10 | 07/10/22 | ✔ | ✔ | ✔ | ✔ | Java Swing based GUI program |  |  |  |
| 11 | 14/10/22 | ✔ | ✔ | ✔ | ✔ | Review 2 |  |  |  |

**Name, Date & Sign of Supervisor/Guide**

# REVIEW-I FORM

Group No: 15

Title of Mini-Project: Solution of LPP(Linear Programming Problems) by dynamic programming

Date of Review-I: 26/09/2023

No. of students in project team: 4

**Student Mini-Project 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 | Literature Survey | | |  |  |  |
| 3 | Innovativeness in solutions | | |  |  |  |
| 4 | Feasibility Of the Project | | |  |  |  |
| 5 | Usage of technology | | |  |  |  |
| 6 | Cost effectiveness and Societal impact | | |  |  |  |
| 7 | Overall Presentation & Performance | | |  |  |  |
| **Comments:** |  | | | | | |

**Project Guide & Panel Members Signature:**

* 1. Dr G T Thampi 2)Dr Madhuri Rao 3)

## Name, Date & Signature Name, Date & Signature Project Coordinator

**Prof Himani Deshpande HOD-AI & DS**

# REVIEW-II FORM

Group No: 15

Title of Mini-Project: Solution of LPP(Linear Programming Problems) by dynamic programming

Date of Review-II: 25/10/2023

No. of students in project team: 4

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Excellent (3) | | Very Good (2) | Good (1) |  |  |  |
| **Sr. No.** | **Observation** | | | **(3)** | **(2)** | **(1)** |
| 1 | Usage of effective skill sets | | |  |  |  |
| 2 | Design and Implementation | | |  |  |  |
| 3 | Testing and Analysis | | |  |  |  |
| 4 | Use of standard engineering norms | | |  |  |  |
| 5 | Cost effectiveness and Societal impact | | |  |  |  |
| 6 | Contribution of an individual member in team | | |  |  |  |
| 7 | Overall Presentation & Performance | | |  |  |  |
| **Comments:** |  | | | | | |

**Project Guide & Panel Members Signature:**

1)Dr G T Thampi 2)Dr Madhuri Rao 3)

## Name, Date & Signature Name, Date & Signature Project Coordinator

**Prof Himani Deshpande HOD- AI& DS**

# 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 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.

## Name, Date & Signature Name, Date & Signature

**External Examiner Internal Examiner**

## Name, Date & Signature HOD-AI&DS