

**Vidyavardhini’s College of**

**Engineering & Technology**

Department of

Computer Engineering

Final Year Project Record Book

Academic Year: 2021 - 2022

Semester: VII and VIII

|  |  |
| --- | --- |
| Name of Students: | 49-Salman S Ansari |
|  | 53-Parth J Desai |
|  | 12-Hitesh K Gosavi |
|  |  |
| Project Guide: | Prof. Sunil Katkar |
| Project Co-Guide: |  |



**Vidyavardhini’s College of Engineering & Technology**

**Vision**

To be a premier institution of technical education; aiming at becoming a valuable resource for industry and society.

**Mission**

* To provide technologically inspiring environment for learning.
* To promote creativity, innovation and professional activities.
* To inculcate ethical and moral values.
* To cater personal, professional and societal needs through quality education.

**Department Vision:**

To evolve as a center of excellence in the field of Computer Engineering to cater to industrial and societal needs.

**Department Mission:**

* To provide quality technical education with the aid of modern resources.
* Inculcate creative thinking through innovative ideas and project development.
* To encourage life-long learning, leadership skills, entrepreneurship skills with ethical & moral values.

**Program Education Objectives (PEOs):**

PEO1: To facilitate learners with a sound foundation in the mathematical, scientific and engineering fundamentals to accomplish professional excellence and succeed in higher studies in Computer Engineering domain

PEO2: To enable learners to use modern tools effectively to solve real-life problems in the field of Computer Engineering.

PEO3: To equip learners with extensive education necessary to understand the impact of computer technology in a global and social context.

PEO4: To inculcate professional and ethical attitude, leadership qualities, commitment to societal responsibilities and prepare the learners for life-long learning to build up a successful career in Computer Engineering.

**Program Specific Outcomes (PSOs):**

PSO1: Analyze problems and design applications of database, networking, security, web technology, cloud computing, machine learning using mathematical skills, and computational tools.

PSO2: Develop computer-based systems to provide solutions for organizational, societal problems by working in multidisciplinary teams and pursue a career in the IT industry.

**Program Outcomes (POs):**

Engineering Graduates will be able to:

* **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 modeling 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 teamwork:** 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.

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**Syllabus of Project Stage I [Sem-VII]**

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|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course Code** | **Title** | **Credit** | **Term Work (TW)** | **Oral & Practical** |
| CSP705 | Major Project- I | 3 | 50 | 25 |

**Objective:** The Project work enables students to develop further skills and knowledge gained during the programme by applying them to the analysis of a specific problem or issue, via a substantial piece of work carried out over an extended period. For students to demonstrate proficiency in the design of a research project, application of appropriate research methods, collection and analysis of data and presentation of results.

**Guidelines:**

1. **Project Topic:**

* To proceed with the project work it is very important to select a right topic. Project can be undertaken on any subject addressing IT programme. Research and development projects on problems of practical and theoretical interest should be encouraged.
* Project work must be carried out by the group of at least two students and maximum three and must be original.
* Students can certainly take ideas from anywhere, but be sure that they should evolve them in the unique way to suit their project requirements.
* The project work can be undertaken in a research institute or organization/company/any business establishment.
* Student must consult internal guide along with external guide (if any) in selection of topic.
* Head of department and senior staff in the department will take decision regarding selection of projects.
* Student has to submit weekly progress report to the internal guide and where as internal guide has to keep track on the progress of the project and also has to maintain attendance report. This progress report can be used for awarding term work marks.
* In case of industry projects, visit by internal guide will be preferred.

2. **Project Report Format:**

At the end of semester a project report should preferably contain at least following details:-

* Abstract
* Introduction
* Literature Survey
* Survey Existing system
* Limitation Existing system or research gap
* Problem Statement and Objective
* Scope
* Proposed System
* Analysis/Framework/ Algorithm
* Details of Hardware & Software
* Design details
* Methodology (your approach to solve the problem)
* Implementation Plan for next semester
* Conclusion
* References

**3. Term Work:**

Distribution of marks for term work shall be as follows:

a. Weekly Attendance on Project Day

b. Project work contribute

c. Project Report (Spiral Bound)

d. Term End Presentation (Internal)

The final certification and acceptance of TW ensures the satisfactory performance on the above aspects.

**4. Oral & Practical:**

Oral &Practical examination of Project-I should be conducted by Internal and External examiners

**Syllabus of Project Stage I [Sem-VIII]**

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|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course Code** | **Title** | **Credit** | **Term Work (TW)** | **Oral & Practical** |
| CSP805 | Major Project- II | 6 | 50 | 50 |

**Objective:** The primary objective is to meet the milestone s formed in the overall project plan decided in Project - I. The idea presented in Project -I should be implemented in Project -II with results, conclusion and future work. The project will culminate in the production of a thesis by each individual student.

**Guidelines: Project Report Format:** At the end of semester a student need to prepare a project report should be prepared as per the guidelines issued by the University of Mumbai. Along with project report a CD containing: project documentation, Implementation code, required utilities, Software‘s and user Manuals need to be attached.

**Term Work:** Student has to submit weekly progress report to the internal guide and where as internal guide has to keep track on the progress of the project and also has to maintain attendance report. This progress report can be used for awarding term work marks. In case of industry projects, visit by internal guide will be preferred to get the status of project. Distribution of marks for term work shall be as follows:

**a)** Weekly Attendance on Project Day

**b)** Project work contributions as per objective

**c)** Project Report (Hard Bound)

**d)** Term End Presentation (Internal)

The final certification and acceptance of TW ensures the satisfactory performance on the above aspects.

**Oral & Practical:** Oral & Practical examination of Project- II should be conducted by Internal and External examiners approved by University of Mumbai. Students have to give presentation and demonstration on the Project-II.

**Course Objectives**

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| --- | --- |
|  | To facilitate students to explore their selected area with extensive literature survey. |
|  | To promote innovative ideas to fulfill industry and society needs. |
|  | To encourage students to work in multi-disciplinary areas. |
|  | To inculcate designing skills using modern tools and team building capabilities with efficient management skills. |
|  | To enable students utilize the available resources like laboratories, library and staff expertize efficiently. |
|  | To enhance technical writing and presentation skills in students with ethical values. |

**Course Outcomes**

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| --- | --- | --- |
| At the end of the course student will be able to: | | PO / PSO |
| CPP701.1  CPP802.1 | Explore beyond the curriculum to identify problem of society, industrial or research needs; investigate the problem through in-depth literature survey and propose appropriate solution to solve the problem. | PO1 to PO8, PO12, PSO1, PSO2 |
| CPP701.2  CPP802.2 | Implement the methodology with modern tools and provide sustainable solution with effective utilization of the resources available. | PO1 to PO9. PO11, PO12 PSO1, PSO2 |
| CPP701.3  CPP802.3 | Analyze and compare the results with the standard results. | PO1 to PO8, PO11, PO12, & PSO1, PSO2 |
| CPP701.4  CPP802.4 | Work as an individual and contribute as a team member with effective management skills to achieve a common objective. | PO8 to PO12, PSO1, PSO2 |
| CPP701.5  CPP802.5 | Write and present their work effectively with ethical values. | PO8 to PO12, PSO1, PSO2 |
| CPP701.6  CPP802.6 | Engage themselves in area of their interest applying the knowledge gained and explore new technical trends. | PO1 to PO12, PSO1, PSO2 |

**Project Group Details**

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| --- | --- |
| Title of the Project: | Realtime Social distance detection and human count using Deep Learning |
| Details of Students: | Name: Salman S Ansari  Mobile No.: 8291241001  E-mail id: Salman.181233101@vcet.edu.in |
| Name: Parth J Desai  Mobile No.: 9325001125  E-mail id: Parth.181303101@vcet.edu.in |
| Name: Hitesh K Gosavi  Mobile No.: 8879768963  E-mail id: Hitesh.173160137@vcet.edu.in |
| Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Mobile No.: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  E-mail id: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Project Guide: | Prof. Sunil Katkar |
| Project Co-Guide: |  |
| Details of Company:  (For industry sponsored Projects) | Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Contact Person: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Contact No.: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  E-mail id: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Brief Description of the Project**

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| Description: A social distancing detection method that uses deep learning to assess the distance between people and help mitigate the effects of the coronavirus pandemic. The detection tool was developed to warn people to keep a safe distance from each other by evaluating a live camera feed. The video image from the camera is used as input and the pre-trained object recognition model based on the YOLOv3 algorithm is used for pedestrian recognition. The distance between people is estimated and each pair of non-compliant people on the screen is shown with a red frame. The result shows that the proposed method is capable of determining the measures of social distancing between various people in the video. The developed technology can be further developed as a recognition tool in real-time applications. |
| Important stages:  Abstract, Problem Statement, Literature survey, Scope of project, Requirement analysis  Methodology: Understanding the Data.  Design, Project Scheduling  Implementation of models, testing and validation,  Getting Model ready with good performance and accuracy.  GUI Development  Deployment of Model.  Report writing.  Results and Analysis.  Conclusions and Future Scope. |
| Software/Hardware Requirements:  Hardware: 8Gb RAM, Intel i5 processor, Hard disk 1tb,  Graphic processor: NVIDIA GeForce MX250  Software: Python, pandas, numpy, pygame, openpyxl, imutils, tkinter, os,  cv2, VS code |

**Weekly Attendance**

**Stage I (Sem VII)**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| **Salman S Ansari** | **16/7-**  **(A)** | **23/7-**  **(P)** | **30/7-**  **(P)** | **6/8-**  **(P)** | **13/8-**  **(P)** | **20/8-**  **(P)** | **3/9-**  **(P)** | **9/9-**  **(P)** |
| **Parth J Desai** | **16/7-**  **(P)** | **23/7-**  **(P)** | **30/7-**  **(P)** | **6/8-**  **(P)** | **13/8-**  **(P)** | **20/8-**  **(P)** | **3/9-**  **(P)** | **9/9-**  **(P)** |
| **Hitesh K Gosavi** | **16/7-**  **(P)** | **23/7-**  **(P)** | **30/7-**  **(P)** | **6/8-**  **(P)** | **13/8-**  **(P)** | **20/8-**  **(P)** | **3/9-**  **(P)** | **9/9-**  **(P)** |
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| Name | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| **Salman S Ansari** | **17/9-**  **(P)** | **24/9-**  **(P)** | **1/10-**  **(P)** | **10/10-(P)** | **15/10-**  **(P)** |  |  |  |
| **Parth J Desai** | **17/9-**  **(P)** | **24/9-**  **(P)** | **1/10-**  **(P)** | **10/10-(P)** | **15/10-**  **(P)** |  |  |  |
| **Hitesh K Gosavi** | **17/9-**  **(P)** | **24/9-**  **(P)** | **1/10-**  **(P)** | **10/10-(P)** | **15/10-**  **(P)** |  |  |  |
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**Stage II (Sem VIII)**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| **Salman S Ansari** |  |  |  |  |  |  |  |  |
| **Parth J Desai** |  |  |  |  |  |  |  |  |
| **Hitesh K Gosavi** |  |  |  |  |  |  |  |  |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| **Salman S Ansari** |  |  |  |  |  |  |  |  |
| **Parth J Desai** |  |  |  |  |  |  |  |  |
| **Hitesh K Gosavi** |  |  |  |  |  |  |  |  |
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**Project Progress Reports of Stage I**

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| Sem VII / Week – 01 Date: 12/07/2021 to 16/07/2021 |
| Progress Achieved:  Defined the Project Scope.  Performed the Study and co-relating with different references.  Discussion with guide.  Remarks/Work Assigned:  Project Scope  Guide Approved. |
| Guide: Prof. Sunil Katkar Co-Guide: |

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| Sem VII / Week – 02 Date: 19/07/2021 to 23/07/2021 |
| Progress Achieved:  Research review.  Study and co-relating different references.  Group Discussion  Remarks/Work Assigned:  Research Review  Guide Approved. |
| Guide: Prof. Sunil Katkar Co-Guide: |

**Project Progress Reports of Stage I**

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| Sem VII / Week – 03 Date: 26/07/2021 to 30/07/2021 |
| Progress Achieved:  Requirements gathering.  Determined the system requirements.  Discussed among the group members regarding all studies made by individual based on project requirements and researches  Remarks/Work Assigned:  Requirement Gathering  Discussions |
| Guide: Prof. Sunil Katkar Co-Guide: |

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| Sem VII / Week – 04 Date: 02/08/2021 to 06/08/2021 |
| Progress Achieved:  System Diagram Development  Discussion with guide.  Remarks/Work Assigned:  Design Analysis  Guide suggestions. |
| Guide: Prof. Sunil Katkar Co-Guide: |

**Project Progress Reports of Stage I**

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| Sem VII / Week – 05 Date: 09/08/2021 to 13/08/2021 |
| Progress Achieved:  Design Review.  Here came up with a proper path and procedure to be followed for project analysis.  Discussion with guide.  Remarks/Work Assigned:  Design Review |
| Guide: Prof. Sunil Katkar Co-Guide: |

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| Sem VII / Week – 06 Date: 17/08/2021 to 20/08/2021 |
| Progress Achieved:  Understanding OpenCV and adding support module to use device camera.  Remarks/Work Assigned:  Guide Approved. |
| Guide: Prof. Sunil Katkar Co-Guide: |

**Project Progress Reports of Stage I**

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| Sem VII / Week – 07 Date: 23/08/2021 to 03/09/2021 |
| Progress Achieved:  Implementing the logic for object detection.  Understanding real-time object tracking.  Remarks/Work Assigned:  Data set research |
| Guide: Prof. Sunil Katkar Co-Guide: |

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| Sem VII / Week – 08 Date: 23/08/2021 to 03/09/2021 |
| Progress Achieved:  Understanding YOLO object detection algorithm.  Remarks/Work Assigned:  Discussion with group. |
| Guide: Prof. Sunil Katkar Co-Guide: |

**Project Progress Reports of Stage I**

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| Sem VII / Week – 09 Date: 06/09/2021 to 09/09/2021 |
| Progress Achieved:  Implementing the logic for object detection.  Remarks/Work Assigned:  Model for object detection developed. |
| Guide: Prof. Sunil Katkar Co-Guide: |

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| Sem VII / Week – 10 Date: 15/09/2021 to 17/09/2021 |
| Progress Achieved:  Implementing YOLO.  Remarks/Work Assigned:  Group discussion |
| Guide: Prof. Sunil Katkar Co-Guide: |

**Project Progress Reports of Stage I**

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| Sem VII / Week – 11 Date: 20/09/2021 to 24/09/2021 |
| Progress Achieved:  Implementing YOLO for real-time object tracking from live feeds.  Remarks/Work Assigned:  Data Pre-Processing |
| Guide: Prof. Sunil Katkar Co-Guide: |

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| Sem VII / Week – 12 Date: 27/09/2021 to 01/10/2021 |
| Progress Achieved:  Displaying the real-time human count on the OpenCV frame.  Discussion with guide.  Remarks/Work Assigned:  Guide Approved |
| Guide: Prof. Sunil Katkar Co-Guide: |

**Project Progress Reports of Stage I**

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| Sem VII / Week – 13 Date: 04/10/2021 to 08/10/2021 |
| Progress Achieved:  Adding functionality to raise an alarm when human count exceeds the limit.  Remarks/Work Assigned:  Successfully added the alarm functionality. |
| Guide: Prof. Sunil Katkar Co-Guide: |

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| --- |
| Sem VII / Week – 14 Date: 11/10/2021 to 15/10/2021 |
| Progress Achieved:  Final testing and checking the output results.  Final Guide discussion  Remarks/Work Assigned:  Final execution successfully completed. |
| Guide: Prof. Sunil Katkar Co-Guide: |

**Project Progress Reports of Stage I**

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| Sem VII / Week – 15 Date :\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_ |
| Progress Achieved:  Remarks/Work Assigned: |
| Guide: Prof. Sunil Katkar Co-Guide: |

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| Sem VII / Week – 16 Date :\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_ |
| Progress Achieved:  Remarks/Work Assigned: |
| Guide: Prof. Sunil Katkar Co-Guide: |

**Project Progress Reports of Stage II**

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| Sem VIII / Week – 01 Date: 17/01/2022 to 21/10/2022 |
| Progress Achieved:  Understanding the logic for social distance detection.  Improving the accuracy of the model using algorithms like NMS.  Remarks/Work Assigned:  Guide Approved |
| Guide: Prof. Sunil Katkar Co-Guide: |

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| --- |
| Sem VIII / Week – 02 Date: 24/01/2022 to 28/01/2022 |
| Progress Achieved:  Successfully implemented social distance detection model and getting promising results.  Remarks/Work Assigned:  Discussion with group  Guide Approved |
| Guide: Prof. Sunil Katkar Co-Guide: |

**Project Progress Reports of Stage II**

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| --- |
| Sem VIII / Week – 03 Date: 31/01/2022 to 04/02/2022 |
| Progress Achieved:  Understanding and implementing IP Webcam and CUDA for GPU acceleration.  Remarks/Work Assigned:  Work successfully implemented. |
| Guide: Prof. Sunil Katkar Co-Guide: |

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| --- |
| Sem VIII / Week – 04 Date: 07/02/2022 to 11/02/2022 |
| Progress Achieved:  Developing GUI for the application using Python Tkinter.  Remarks/Work Assigned:  Discussion with group |
| Guide: Prof. Sunil Katkar Co-Guide: |

**Project Progress Reports of Stage II**

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| Sem VIII/ Week – 05 Date: 14/02/2022 to 18/02/2022 |
| Progress Achieved:  Adding data storing functionalities to the application like word, excel and text file.  Remarks/Work Assigned:  Successfully implemented |
| Guide: Prof. Sunil Katkar Co-Guide: |

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| Sem VIII / Week – 06 Date: 21/02/2022 to 25/02/2022 |
| Progress Achieved:  Developing GUI for the application using Python Tkinter.  Remarks/Work Assigned:  GUI successfully created |
| Guide: Prof. Sunil Katkar Co-Guide: |

**Project Progress Reports of Stage II**

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| Sem VIII / Week – 07 Date: 28/02/2022 to 04/03/2022 |
| Progress Achieved:  Solving errors encountered while executing the application.  Remarks/Work Assigned:  Discussion with group  Guide approved |
| Guide: Prof. Sunil Katkar Co-Guide: |

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| Sem VIII / Week – 08 Date: 29/03/2022 to 01/04/2022 |
| Progress Achieved:  Testing the application with different datasets and changes suggested by the guide.  Remarks/Work Assigned:  Guide approved |
| Guide: Prof. Sunil Katkar Co-Guide: |

**Project Progress Reports of Stage II**

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| --- |
| Sem VIII / Week – 09 Date: 04/04/2022 to 08/04/2022 |
| Progress Achieved:  Black book, Research paper, Handbook filling and PowerPoint presentation creation.  Remarks/Work Assigned:  Work successfully completed  Guide Approved |
| Guide: Co-Guide: |

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| Sem VIII / Week – 10 Date: 18/04/2022 to 22/04/2022 |
| Progress Achieved:  Final testing and checking the output results.  Final Guide discussion  Remarks/Work Assigned:  Final execution successfully completed. |
| Guide: Co-Guide: |

**Project Progress Reports of Stage II**

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| Sem VIII / Week – 11 Date :\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_ |
| Progress Achieved:  Remarks/Work Assigned: |
| Guide: Co-Guide: |

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| Sem VIII / Week – 12 Date :\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_ |
| Progress Achieved:  Remarks/Work Assigned: |
| Guide: Co-Guide: |

**Project Progress Reports of Stage II**

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| Sem VIII / Week – 13 Date :\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_ |
| Progress Achieved:  Remarks/Work Assigned: |
| Guide: Co-Guide: |

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| --- |
| Sem VIII / Week – 14 Date :\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_ |
| Progress Achieved:  Remarks/Work Assigned: |
| Guide: Co-Guide: |

**Project Progress Reports of Stage II**

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| Sem VIII / Week – 15 Date :\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_ |
| Progress Achieved:  Remarks/Work Assigned: |
| Guide: Co-Guide: |

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| --- |
| Sem VIII / Week – 16 Date :\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_ |
| Progress Achieved:  Remarks/Work Assigned: |
| Guide: Co-Guide: |

**Project Showcase / Publication Record**

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\* Attach the proof of the same.

**Performance Criteria**

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| Sr. No. | Performance Criteria | Markers |
| 1 | Initial survey | * Efforts taken to identify the project idea through proper survey |
| 2 | Progressive survey | * Efforts taken to overcome difficulties during the project progress through proper survey |
| 3 | Application of project | * Application towards societal, academic, environmental needs etc. |
| 4 | Literature survey | * Quality * Understanding * Analysis * Learning new technology/methods |
| 5 | Project detailing | * Road map * Design of system (including block diagram/ flowchart/ circuit design) * Hardware/software selection |
| 6 | Implementation | * Project implementation * Testing & trouble shooting * Final integration |
| 7 | Regularity | * Regular reporting to guide/co-guide |
| 8 | Completion of work Assigned | * Timely completion of the assigned work by guide/co-guide |
| 9 | Proficiency in Hardware/Software | * Proficiency in Hardware/Software tools used in the project |
| 10 | Teamwork | * Contribution as a team member * Co-ordination * Leadership |
| 11 | Ethical values | * Maintaining ethical values in reporting the work done |
| 12 | Presentation 1 & 2 | * Communication & presentation skills * Understanding * Completion * Demonstration |
| 13 | Quality of report | * Content * Formatting * Referencing * Plagiarism check |

**In-semester Evaluation of Stage I**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name of Student | Performance Criteria | Marks | Member 1 | Member 2 | Member 3 | Guide | Co-Guide | Average |
|  | Initial survey | 5 |  |  |  |  |  |  |
| Progressive survey | 5 |  |  |  |  |  |  |
| Application of project | 5 |  |  |  |  |  |  |
| Literature survey | 25 |  |  |  |  |  |  |
| Project Detailing | 10 |  |  |  |  |  |  |
| Implementation | 15 |  |  |  |  |  |  |
| Regularity | 5 |  |  |  |  |  |  |
| Completion of work assigned | 5 |  |  |  |  |  |  |
| Proficiency in Hardware/Software | 5 |  |  |  |  |  |  |
| Teamwork | 5 |  |  |  |  |  |  |
| Ethical values | 5 |  |  |  |  |  |  |
| Presentation 1 | 20 |  |  |  |  |  |  |
| Presentation 2 | 20 |  |  |  |  |  |  |
| Quality of report | 20 |  |  |  |  |  |  |
| **Total Marks (Out of 150)** | | | | | | |  |
| **Marks Out of 50** | | | | | | |  |
|  | Initial survey | 5 |  |  |  |  |  |  |
| Progressive survey | 5 |  |  |  |  |  |  |
| Application of project | 5 |  |  |  |  |  |  |
| Literature survey | 25 |  |  |  |  |  |  |
| Project Detailing | 10 |  |  |  |  |  |  |
| Implementation | 15 |  |  |  |  |  |  |
| Regularity | 5 |  |  |  |  |  |  |
| Completion of work assigned | 5 |  |  |  |  |  |  |
| Proficiency in Hardware/Software | 5 |  |  |  |  |  |  |
| Teamwork | 5 |  |  |  |  |  |  |
| Ethical values | 5 |  |  |  |  |  |  |
| Presentation 1 | 20 |  |  |  |  |  |  |
| Presentation 2 | 20 |  |  |  |  |  |  |
| Quality of report | 20 |  |  |  |  |  |  |
| **Total Marks (Out of 150)** | | | | | | |  |
| **Marks Out of 50** | | | | | | |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_ |
| Member 1 | Member 2 | Member 3 | Guide | Co-Guide |

**In-semester Evaluation of Stage I**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Name of Student | Performance Criteria | | Marks | | Member 1 | Member 2 | | Member 3 | Guide | | Co-Guide | Average | |
|  |  | Initial survey | | 5 | |  |  | |  |  | |  |  | |
|  | Progressive survey | | 5 | |  |  | |  |  | |  |  | |
|  | Application of project | | 5 | |  |  | |  |  | |  |  | |
|  | Literature survey | | 25 | |  |  | |  |  | |  |  | |
|  | Project Detailing | | 10 | |  |  | |  |  | |  |  | |
|  | Implementation | | 15 | |  |  | |  |  | |  |  | |
|  | Regularity | | 5 | |  |  | |  |  | |  |  | |
|  | Completion of work assigned | | 5 | |  |  | |  |  | |  |  | |
|  | Proficiency in Hardware/Software | | 5 | |  |  | |  |  | |  |  | |
|  | Teamwork | | 5 | |  |  | |  |  | |  |  | |
|  | Ethical values | | 5 | |  |  | |  |  | |  |  | |
|  | Presentation 1 | | 20 | |  |  | |  |  | |  |  | |
|  | Presentation 2 | | 20 | |  |  | |  |  | |  |  | |
|  | Quality of report | | 20 | |  |  | |  |  | |  |  | |
|  | **Total Marks (Out of 150)** | | | | | | | | | | |  | |
|  | **Marks Out of 50** | | | | | | | | | | |  | |
|  |  | Initial survey | | 5 | |  |  | |  |  | |  |  | |
|  | Progressive survey | | 5 | |  |  | |  |  | |  |  | |
|  | Application of project | | 5 | |  |  | |  |  | |  |  | |
|  | Literature survey | | 25 | |  |  | |  |  | |  |  | |
|  | Project Detailing | | 10 | |  |  | |  |  | |  |  | |
|  | Implementation | | 15 | |  |  | |  |  | |  |  | |
|  | Regularity | | 5 | |  |  | |  |  | |  |  | |
|  | Completion of work assigned | | 5 | |  |  | |  |  | |  |  | |
|  | Proficiency in Hardware/Software | | 5 | |  |  | |  |  | |  |  | |
|  | Teamwork | | 5 | |  |  | |  |  | |  |  | |
|  | Ethical values | | 5 | |  |  | |  |  | |  |  | |
|  | Presentation 1 | | 20 | |  |  | |  |  | |  |  | |
|  | Presentation 2 | | 20 | |  |  | |  |  | |  |  | |
|  | Quality of report | | 20 | |  |  | |  |  | |  |  | |
|  | **Total Marks (Out of 150)** | | | | | | | | | | |  | |
|  | **Marks Out of 50** | | | | | | | | | | |  | |
| \_\_\_\_\_\_\_\_\_\_\_ | | | \_\_\_\_\_\_\_\_\_\_\_ | | \_\_\_\_\_\_\_\_\_\_\_ | | | \_\_\_\_\_\_\_\_\_\_\_ | | | \_\_\_\_\_\_\_\_\_\_\_\_ | | |
| Member 1 | | | Member 2 | | Member 3 | | | Guide | | | Co-Guide | | |

**In-semester Evaluation of Stage II**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Name of Student | Performance Criteria | | Marks | | Member 1 | Member 2 | | Member 3 | Guide | | Co-Guide | Average | |
|  |  | Initial survey | | -- | | -- | -- | | -- |  | |  |  | |
|  | Progressive survey | | - | | -- | -- | | -- |  | |  |  | |
|  | Application of project | | -- | | -- | -- | | -- |  | |  |  | |
|  | Presentation 1 | | 20 | |  |  | |  |  | |  |  | |
|  | Project Detailing | | 10 | |  |  | |  |  | |  |  | |
|  | Implementation | | 30 | |  |  | |  |  | |  |  | |
|  | Regularity | | 5 | |  |  | |  |  | |  |  | |
|  | Completion of work assigned | | 5 | |  |  | |  |  | |  |  | |
|  | Proficiency in Hardware/Software | | 10 | |  |  | |  |  | |  |  | |
|  | Teamwork | | 5 | |  |  | |  |  | |  |  | |
|  | Ethical values | | 5 | |  |  | |  |  | |  |  | |
|  | Presentation 2 | | 20 | |  |  | |  |  | |  |  | |
|  | Presentation 3 | | 20 | |  |  | |  |  | |  |  | |
|  | Quality of report | | 20 | |  |  | |  |  | |  |  | |
|  | **Total Marks (Out of 150)** | | | | | | | | | | |  | |
|  | **Marks Out of 50** | | | | | | | | | | |  | |
|  |  | Initial survey | | -- | | -- | -- | | -- |  | |  |  | |
|  | Progressive survey | | - | | -- | -- | | -- |  | |  |  | |
|  | Application of project | | -- | | -- | -- | | -- |  | |  |  | |
|  | Presentation 1 | | 20 | |  |  | |  |  | |  |  | |
|  | Project Detailing | | 10 | |  |  | |  |  | |  |  | |
|  | Implementation | | 30 | |  |  | |  |  | |  |  | |
|  | Regularity | | 5 | |  |  | |  |  | |  |  | |
|  | Completion of work assigned | | 5 | |  |  | |  |  | |  |  | |
|  | Proficiency in Hardware/Software | | 10 | |  |  | |  |  | |  |  | |
|  | Teamwork | | 5 | |  |  | |  |  | |  |  | |
|  | Ethical values | | 5 | |  |  | |  |  | |  |  | |
|  | Presentation 2 | | 20 | |  |  | |  |  | |  |  | |
|  | Presentation 3 | | 20 | |  |  | |  |  | |  |  | |
|  | Quality of report | | 20 | |  |  | |  |  | |  |  | |
|  | **Total Marks (Out of 150)** | | | | | | | | | | |  | |
|  | **Marks Out of 50** | | | | | | | | | | |  | |
| \_\_\_\_\_\_\_\_\_\_\_\_ | | | \_\_\_\_\_\_\_\_\_\_\_\_ | | \_\_\_\_\_\_\_\_\_\_\_\_ | | | \_\_\_\_\_\_\_\_\_\_\_\_ | | | \_\_\_\_\_\_\_\_\_\_\_\_ | | |
| Member 1 | | | Member 2 | | Member 3 | | | Guide | | | Co-Guide | | |

**In-semester Evaluation of Stage II**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Name of Student | Performance Criteria | | Marks | | Member 1 | Member 2 | | Member 3 | Guide | | Co-Guide | Average | |
|  |  | Initial survey | | -- | | -- | -- | | -- |  | |  |  | |
|  | Progressive survey | | - | | -- | -- | | -- |  | |  |  | |
|  | Application of project | | -- | | -- | -- | | -- |  | |  |  | |
|  | Presentation 1 | | 20 | |  |  | |  |  | |  |  | |
|  | Project Detailing | | 10 | |  |  | |  |  | |  |  | |
|  | Implementation | | 30 | |  |  | |  |  | |  |  | |
|  | Regularity | | 5 | |  |  | |  |  | |  |  | |
|  | Completion of work assigned | | 5 | |  |  | |  |  | |  |  | |
|  | Proficiency in Hardware/Software | | 10 | |  |  | |  |  | |  |  | |
|  | Teamwork | | 5 | |  |  | |  |  | |  |  | |
|  | Ethical values | | 5 | |  |  | |  |  | |  |  | |
|  | Presentation 2 | | 20 | |  |  | |  |  | |  |  | |
|  | Presentation 3 | | 20 | |  |  | |  |  | |  |  | |
|  | Quality of report | | 20 | |  |  | |  |  | |  |  | |
|  | **Total Marks (Out of 150)** | | | | | | | | | | |  | |
|  | **Marks Out of 50** | | | | | | | | | | |  | |
|  |  | Initial survey | | -- | | -- | -- | | -- |  | |  |  | |
|  | Progressive survey | | - | | -- | -- | | -- |  | |  |  | |
|  | Application of project | | -- | | -- | -- | | -- |  | |  |  | |
|  | Presentation 1 | | 20 | |  |  | |  |  | |  |  | |
|  | Project Detailing | | 10 | |  |  | |  |  | |  |  | |
|  | Implementation | | 30 | |  |  | |  |  | |  |  | |
|  | Regularity | | 5 | |  |  | |  |  | |  |  | |
|  | Completion of work assigned | | 5 | |  |  | |  |  | |  |  | |
|  | Proficiency in Hardware/Software | | 10 | |  |  | |  |  | |  |  | |
|  | Teamwork | | 5 | |  |  | |  |  | |  |  | |
|  | Ethical values | | 5 | |  |  | |  |  | |  |  | |
|  | Presentation 2 | | 20 | |  |  | |  |  | |  |  | |
|  | Presentation 3 | | 20 | |  |  | |  |  | |  |  | |
|  | Quality of report | | 20 | |  |  | |  |  | |  |  | |
|  | **Total Marks (Out of 150)** | | | | | | | | | | |  | |
|  | **Marks Out of 50** | | | | | | | | | | |  | |
| \_\_\_\_\_\_\_\_\_\_\_\_ | | | \_\_\_\_\_\_\_\_\_\_\_\_ | | \_\_\_\_\_\_\_\_\_\_\_\_ | | | \_\_\_\_\_\_\_\_\_\_\_\_ | | | \_\_\_\_\_\_\_\_\_\_\_\_ | | |
| Member 1 | | | Member 2 | | Member 3 | | | Guide | | | Co-Guide | | |

**Project Exit Survey I (Stage I)**

Kindly provide your valuable feedback on how well the course outcomes are developed / cultivated in you during your project work.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name of Student**  **Course Outcome** | | Salman S Ansari | Parth J Desai | Hitesh K Gosavi |  |
| At the end of the course student will be able to: | |
| CPP701.1 | Explore beyond the curriculum to identify problem of society, industrial or research needs; investigate the problem through in-depth literature survey and propose appropriate solution to solve the problem. | 3 | 3 | 3 |  |
| CPP701.2 | Implement the methodology with modern tools and provide sustainable solution with effective utilization of the resources available. | 3 | 3 | 3 |  |
| CPP701.3 | Analyze and compare the results with the standard results. | 3 | 3 | 3 |  |
| CPP701.4 | Work as an individual and contribute as a team member with effective management skills to achieve a common objective. | 3 | 3 | 3 |  |
| CPP701.5 | Write and present their work effectively with ethical values. | 3 | 3 | 3 |  |
| CPP701.6 | Engage themselves in area of their interest applying the knowledge gained and explore new technical trends. | 3 | 3 | 3 |  |
| **Signature** |  |  |  |  |  |

Enter correlation level 1, 2 or 3 as defined below

1: Slight (Low) 2: Moderate (Medium) 3: Substatial (High)

**Project Exit Survey II (Stage II)**

Kindly provide your valuable feedback on how well the course outcomes are developed / cultivated in you during your project work.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name of Student**  **Course Outcome** | | Salman S Ansari | Parth J Desai | Hitesh K Gosavi |  |
| At the end of the course student will be able to: | |
| CPP802.1 | Explore beyond the curriculum to identify problem of society, industrial or research needs; investigate the problem through in-depth literature survey and propose appropriate solution to solve the problem. | 3 | 3 | 3 |  |
| CPP802.2 | Implement the methodology with modern tools and provide sustainable solution with effective utilization of the resources available. | 3 | 3 | 3 |  |
| CPP802.3 | Analyze and compare the results with the standard results. | 3 | 3 | 3 |  |
| CPP802.4 | Work as an individual and contribute as a team member with effective management skills to achieve a common objective. | 3 | 3 | 3 |  |
| CPP802.5 | Write and present their work effectively with ethical values. | 3 | 3 | 3 |  |
| CPP802.6 | Engage themselves in area of their interest applying the knowledge gained and explore new technical trends. | 3 | 3 | 3 |  |
| **Signature** |  |  |  |  |  |

Enter correlation level 1, 2 or 3 as defined below

1: Slight (Low) 2: Moderate (Medium) 3: Substatial (High)