

Department of Technical Education

Capstone project

Capstone project Scope Document

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The purpose of this project is to create an AI-powered smart mirror using a Raspberry Pi 3B+. The smart mirror will be able to display useful information such as the time, date, weather, news, calendar events, and more. It will also have voice recognition capabilities to allow users to interact with it using natural language.

Capstone Project Title: AI Smart mirror using raspberry pi 3B+

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Problem Statement: The major problem of any existing mirror is displaying just the object in front of it or just the human face having to interact with them. This project is developed with the intention that people spend quality time in front of the mirror.

Objectives: The objective of this project is to make a mirror which does the smart things like it shows weather, date and time, News etc. All these smart features are to be done using raspberry pi 3B+.

Capstone project description: The AI Smart Mirror project involves building a customizable mirror that displays information such as time, date, weather, news, and calendar events. It is powered by a Raspberry Pi 3B+ and incorporates voice recognition capabilities using a microphone and speaker. The project includes designing and building the smart mirror frame, installing a two-way mirror, and developing software to display information and allow users to interact with the mirror. The project budget is 11,000 and it will be delivered with a fully functional smart mirror, software source code, user manual, and documentation.

Capstone project Deliverables:

- A functional AI Smart Mirror using Raspberry Pi 3B+, which can recognize users via facial recognition and display personalized information.
- A comprehensive user manual that outlines the usage and customization of the Smart Mirror.
- The source code for the Smart Mirror software.

Key milestones:

- Requirements Gathering
- Design and Development
- Sensor and Module Integration
- Machine Learning Algorithm Development
- API and Third-Party Library Integration
- Testing
- Deployment

Constraints:

- Hardware Limitations
- Budget Constraints
- Time Constraints
- Power Limitations
- Compatibility Constraints
- Data Privacy and Security Constraints
- User Interface Constraints

Estimated Capstone Project Duration:

- Planning and design (1 to 3 weeks)
- Development phase (4 to 10 weeks)
- Documentation and Testing phase (11 to 13 weeks)
- Deployment phase (14th week)

Estimated Capstone project cost:

- Hardware components: ₹9,500
- Development and design hours: ₹1,800
- Other expenses: ₹3,300
- Total budget: ₹14,100

Date:**Signature of the student****Signature of the cohort owner**