

Format of Project-I Synopsis (B.Tech. CSE 6th Semester)
Session – Jan 2025

Group Number <i>(To be assigned by Department)</i>		Mobile Number	Signature
Group Leader Name	Name: Srishti Roll Number: 2226257	+91 99140 43443	
Team Members	Name: Sachin Kumar Roll Number: 2226253	+91 76964 16556	
Proposed Title of the Project	AI-Powered Assistant for PC Control and Home Automation		
Problem Statement	<p>With the increasing need for automation and hands-free interaction, an intelligent voice-controlled assistant can greatly enhance user experience. The proposed system will enable users to control their personal computers and smart home devices using natural language commands. This project aims to provide a seamless AI-powered virtual assistant for everyday tasks, improving convenience and accessibility.</p>		
Objectives of the Project	<ul style="list-style-type: none"> • Develop a JARVIS-like AI assistant capable of recognizing and executing voice commands. • Enable PC control for file management, application handling, and internet browsing. • Integrate with home automation systems to control IoT-based smart devices. • Implement machine learning techniques to improve accuracy and response. • Design an interactive voice and GUI-based feedback system for user interaction. 		
Methodology	<ul style="list-style-type: none"> • Requirement Analysis: Identifying key functionalities and hardware/software requirements. • Speech Recognition Integration: Implementing Google Speech API, Vosk, or Whisper for voice input. • Natural Language Processing (NLP): Utilizing OpenAI API, Rasa, or custom NLP models. • PC Control Mechanism: Using Python libraries like PyAutoGUI, keyboard, and speech_recognition. • Home Automation Integration: Connecting with IoT devices via MQTT, Home Assistant, or Raspberry Pi. • GUI & Voice Response: Developing a user-friendly interface with real-time voice feedback. • Testing & Optimization: Enhancing system performance through iterative testing and user feedback. 		

Format of Project-I Synopsis (B.Tech. CSE 6th Semester)
Session – Jan 2025

Project Outcomes	<ul style="list-style-type: none">• A fully functional voice-controlled AI assistant for PC and home automation.• Hands-free execution of common computer tasks and smart home device operations.• Adaptive learning capabilities for personalized user experience.• Seamless integration with open-source and IoT-based technologies.
Conclusion	<p>This project presents an innovative approach to AI-driven automation by integrating speech recognition, PC control, and smart home management. It enhances accessibility, efficiency, and ease of use, making everyday tasks more convenient. The proposed system is scalable, customizable, and can be further expanded with additional AI functionalities.</p>
Technologies to be used	<ul style="list-style-type: none">• Programming Languages: Python• Speech Recognition: Google Speech API, Vosk, Whisper• NLP & AI: OpenAI API, Rasa, TensorFlow• PC Automation: PyAutoGUI, keyboard, speech_recognition• Home Automation: MQTT, Home Assistant, Raspberry Pi, Arduino• User Interface: Tkinter, PyQt, or web-based GUI