



Cover page

Project title: iHome

Academic Year: 2nd Semester, 2023/2024

Group Members: Aamer Qanadilo

Department Name: Computer Eng.

Maen Khader

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Project Type **Software** or **Hardware** (Choose one)

Supervisor Name: Dr. Anas Toma

Format:

- Single space, Times New Roman.
- 12 pt,
- Maximum 1 page.

Abstract Body:

Items must be provided in the Abstract:

- Why do you think this project is important? Please explain the significance of this Project in brief.
- In your point of view what are the important aspects that should be covered in the project?
- Objective(s): In your view, please explain the main objectives of the project.
- Methodology: Give a brief outline of the application development process.
- Had this project been done before? Are there any similar applications available today?
- **Note:** Please deliver this abstract early to ensure that your Project has been approved by the department's projects committee. **Registration will not be done without this approval.**



Project's Abstract:

In this project, we aim to develop a smart home system, titled "**iHome**," powered by **OpenAI** and controlled through the mobile application. The system consists of a main box housing an interactive robot with emotion-display capabilities and control sensors for temperature, humidity, and fire detection, alongside external sensor boxes equipped with sensors like **MQ-5** to detect gas leak and **DHT22** to measure the temperature and humidity. The external sensor boxes contain an **ESP/Arduino** to control the sensors and connect to the mobile application. The main box will contain a **Raspberry Pi**, enabling speech-to-text and text-to-speech functionalities and featuring the interactive robot. The project's objectives include designing the interactive robot box, integrating control sensors for safety and environmental monitoring, developing a mobile app for real-time access and control, and incorporating LED lights for user experience. By leveraging **OpenAI**'s capabilities, the system enables seamless connectivity and intelligent interaction, aiming to showcase the probability and effectiveness of modern smart home technology for convenience, safety, and enhanced control over automation.

Objectives:

- Designing and implementing an interactive robot companion powered by OpenAI.
- Integrating essential features such as security mode and IoT automation.
- Developing a user-friendly mobile app for remote control.
- Ensuring seamless interaction between users and their smart home system.

Methodology:

Our methodology involves thorough research to understand user needs, followed by the design and implementation of our smart home system. We focus on building an interactive robot companion powered by OpenAI and integrating essential features like security mode and IoT automation. Through this methodology, we aim to deliver a robust and user-friendly smart home system that enhances convenience, security, and control for users.

Initial Main Box Template:



External Sensor Boxes Template:

