HASAN KALYONCU UNIVERSITY
Electrical-Electronics Engineering Department
EEE 499 Project Proposal Form

Part I. Project Proposer

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Part II. Project Information

Title of the Project	Elevator System Automation using a Programmable Logic Controller (PLC)				
Maximum Cost of implementation (TL)	10.000-15.000	**Conceptual Design Dead Line**	**in 5 weeks**	**Prototype Production Deadline**	**in 13 weeks**
Standards and licenses to be used in the project. example; IP65, IEEE, APACHE, MIT, etc.					

Project Description

This project focuses on the **automation of a 3-story elevator system** using a Programmable Logic Controller (PLC). The system is designed to manage the movement of the elevator cabin, control lighting, and ensure safety measures are in place. This project will provide students with hands-on experience in designing, programming, and implementing an elevator control system

Project Features:

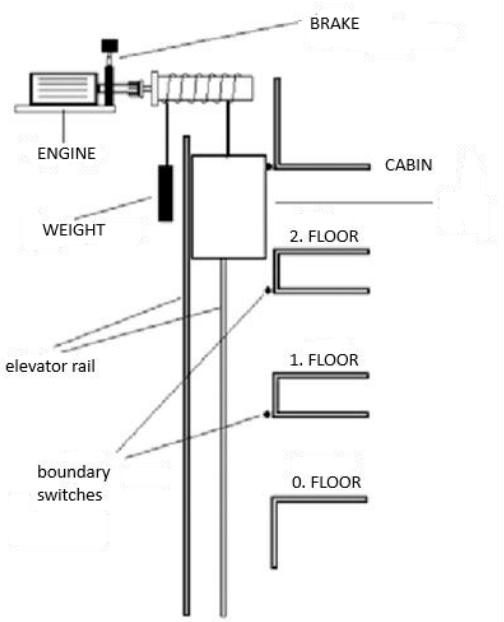
1. **Control Elements**:
   - There will be **3 floor buttons** and 1 **emergency stop button** inside the cabin.
   - Each floor will have **1 call button**.
   - Sensors will be placed on each floor to detect the elevator cabin's location.
2. **Elevator Cabin Lighting and Occupied Indicator**:
   - The cabin lighting and occupied indicator will be activated for **10 seconds** when the elevator door opens or the call button is pressed.
3. **Electrical Safety Measures**:
   - **Emergency Stop**: In case of an emergency, pressing the stop button will halt the cabin at its current position.
   - **Alarm and Audio Notification**: In case of a malfunction, an audio notification or alarm button will be placed inside the cabin. This notification system will work independently of the PLC.
   - **Manual Door Control**: Doors will be manually opened and closed; no automated motorized door system is required.
   - **Safety Lock**: The elevator door will not open when the cabin is not at the floor.

Project Implementation:

1. **Cabin Movement Control**: The PLC program will control the motor to move the cabin up and down between floors. Sensors will detect the cabin’s location, and the motor will stop at the appropriate floor.

2. **Lighting and Occupied Indicator**: When the call button is pressed or the door is opened, the PLC will activate the cabin lighting and occupied indicator for 10 seconds.
3. **Emergency Stop and Alarm**: When the emergency stop button is pressed, the PLC will ensure the cabin stays in place. Additionally, the audio notification system will activate in the event of a malfunction.
4. **Manual Door Operation**: The doors will be manually operated, and the PLC will prevent the doors from opening if the cabin is not at the designated floor.

This project will allow students to learn the fundamentals of elevator control systems. It provides a comprehensive hands-on experience with PLC programming, sensor integration, and safety features



Project Justification	
Novelty	
New aspects	Learning automation process, Ladder logics
Complexity	**Basic**
Challenging problem and issues	Controlling AC motor in high precision
Related electrical-electronics science fields and subfields	Industrial Automation
Tools	PLC, Servo Motor, Sensors , Buttons
Risk involved	
Potential problems and alternative solutions	
Minimum work required	10 weeks with 2 students