PROJECT REPORT

Group-17

TITLE OF THE PROJECT

IOT BASED AUTOMATED INDUSTRY PROTECTION SYSTEM

GROUP MEMBERS DETAILS

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ABSTRACT IDEA

The "IOT Based Automated Industry Protection System" is a Raspberry Pi-based embedded system designed to enhance warehouse safety and efficiency. It incorporates various sensors in four quadrants of the warehouse:

1. Flame detection with IR sensor triggers an App alert and activates a water sprinkler for fire prevention.

2. DHT11 sensor monitors temperature and humidity, activating exhaust fans when thresholds are exceeded to maintain optimal conditions.

3. LDR sensor senses low light levels, automatically illuminating the area to improve visibility and safety.

4. MQ-5 gas sensors detect leaks, activating exhaust fans and sending alerts to an app or website for quick response.

JUSTIFICATION AND NOVELTY IN SELECTED TOPIC

The "Automated Industry Protection System" was chosen because it's an innovative way to make warehouses safer and more efficient. Here's why it's different and special:

1. All-in-One Safety:

Unlike other systems that deal with one safety issue, ours combines many sensors to keep an eye on everything at once.

2. Quick Response:

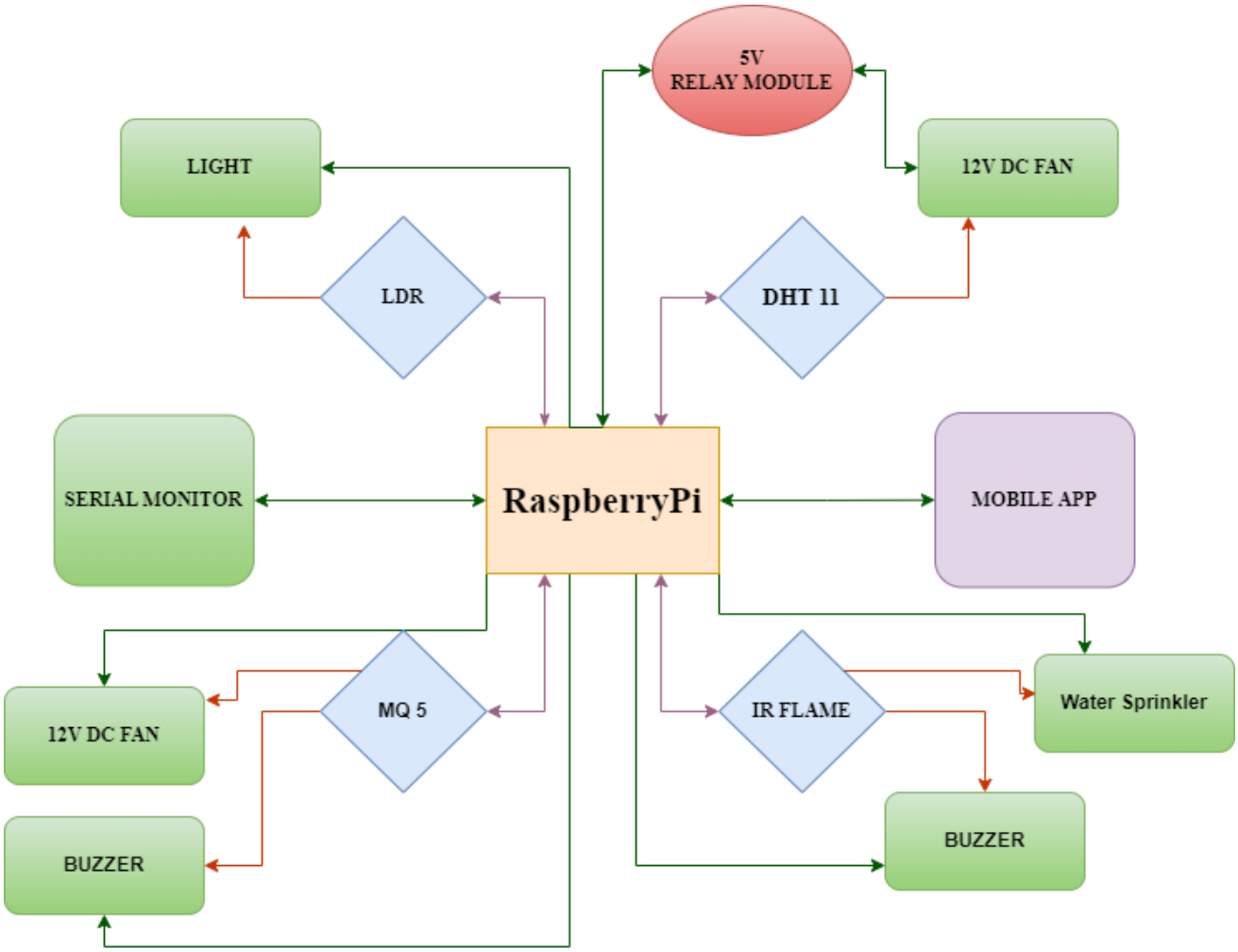
When something goes wrong, our system acts immediately. Other systems might need manual support to do something.

3. Safer and Smoother:

It keeps your warehouse safer by stopping problems like fires and leaks. It also helps things run more smoothly with automatic temperature and light control.

In simple terms, our project is special because it watches over everything in a warehouse, acts quickly, saves resources, can be adjusted easily. It makes warehouses safer and more efficient, which is not always the case with other systems.

BLOCK DIAGRAM



HARDWARE MODULES

1. **RASPBERRY PI**
2. **IR FLAME SENSOR**
3. **LDR SENSOR**
4. **MQ-5 GAS SENSOR**
5. **DHT11 TEMPERATURE SENSOR**
6. **RELAY MODULE**
7. **LED LIGHT**
8. **BUZZER**
9. **12V DC FAN**
10. **BREAD BOARD**
11. **WATER SPRINKLER**

NETWORKING MODULES

1. **WIFI AND BLUETOOTH INTERFACE (BUILD-IN RASPBERRYPI)**

SOFTWARE MODULES

1. **Real VNC**
2. **Excel Sheet To Store Data in RaspberryPi**
3. **Text Editor (Python, JS)**
4. **Fire Base to Store Data in Data Base**
5. **MIT App Developer**

PHASE-1 MID EVALUATION

1. **Project Scope: Developed "Automated Industry Protection System" using Raspberry Pi, focusing on industrial safety and automation.**

2. **Sensor Integration: Incorporated LDR, DHT11, IR Flame, and Gas sensors for comprehensive environmental monitoring.**

3. **Automation: Controlled LED, fan, and activated a buzzer based on sensor readings for safety enhancement.**

4. **Data Logging: Established organized data storage in an Excel sheet on the Raspberry Pi for long-term records.**

5. **Mobile App: Developed a prototype mobile app.**

PHASE-II END EVALUATION

1. **Safety Enhancement: Introducing a buzzer and fan, which activate in the presence of gas.**

2. **Fire Suppression: Integrated an automated sprinkler system to suppress the fire.**

3. **Advanced Mobile App: Enhanced the mobile app for real-time data, database access, and robust alerts.**

Thank You