IOT Project

Efficient Living

Innovative Strategies for smart life to reduce Human effort

Professor Dr. Saraswathi D, SCOPE
Course id: BECE351E

Problem Statement

The main objective of the project is Help the people to have modern technology By providing them Facilities like open gates when they came without any interaction with human. And to turn on light and requirements .In addition to it to have a fire detection making thies all on a single arduino uno and using the Wireless Senser system

Introduction

ØIt will be more efficient and convenient for people to access their homes and other facilities.
Ø It will be more secure, as it will eliminate the need for people to interact with humans.
Ø It will be low-cost and easy to install.
The system that this project will develop will be a valuable addition to the modern world. It will make it easier and more convenient for people to access their homes and other facilities, and it will be more secure than traditional methods of access control. The system will also be low-cost and easy to install, making it accessible to a wide range of people.

Products

Arduino uno r3
RFID
IR sensor
Servo motor
Wires
Breadboard
Relay module

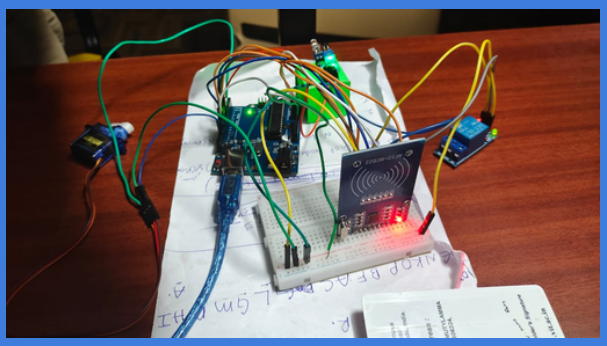
Further expansion:

Add a camera to the system: This would allow you to see who is approaching the door and grant access accordingly.
Add a voice recognition system: This would be especially helpful if you have your hands full or are unable to reach the door.
Connect the system to the cloud: You could also use the cloud to store data about the system, such as who has accessed the door and when.
Add other sensors to the system.
Remote access: You could remotely control the system from anywhere in the world, which would be especially helpful if you are away from home.
Data collection: You could collect data about the system, such as who has accessed the door and when, which could be used to improve the system or to track the usage of the system.
Security: The system could be made more secure by connecting it to the cloud, which would allow you to use security features such as two-factor authentication

Result:

The RFID system is always active, scanning for tags. When a tag is detected, the system reads the tag's ID and compares it to a list of authorized tags. If the tag is authorized, the system grants access and the door of the garage or gate is opened with the help of a servo motor. The lights in the garage or gate area are also turned on automatically.n IR sensor is placed at the exit of the garage or gate. When the sensor detects motion, the lights and the door are closed automatically. This ensures that the garage or gate is secure even when the system is not actively being used.The system can be programmed to allow or deny access to specific individuals or groups of people. It can also be programmed to send alerts if the system is tampered with or if an unauthorized person attempts to gain access.
The system is a cost-effective and secure way to control access to a garage or gate. It is easy to install and maintain, and it can be customized to meet the specific needs of the user

Circuit



Disadvantages:
Complexity
Privacy

Advantages :
Convenience
Security
Efficiency

Cost estimation : 1,350 rupees

Conclusion:

The project is a prototype of an automatic door opening system using RFID technology. The system consists of an RFID reader, a servo motor, a light sensor, and an IR sensor. The RFID reader is used to detect the presence of an RFID tag. If the tag is authorized, the servo motor will open the door. The light sensor is used to turn on the lights when the door is open. The IR sensor is used to close the door and turn off the lights when the area is clear.

The system was tested with a variety of RFID tags, and it was found to be effective in opening the door only when the authorized tag was present. The lights were also turned on and off as expected. The IR sensor was also effective in closing the door and turning off the lights when the area was clear.

Teammates
Manohar Reddy
Sivanagaraju
KamalNath Reddy
RamiReddy

Code, Circuit and Working :

To see the code, Systematic Circuit and execution, follow this link:
https://github.com/manoharreddyvoladri/IOT_Efficient-life
The GitHub repository contains the files.