RFID Door Lock

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Objective: To make an arduino based RFID door lock.

Summary:

Initially the red led is glowing and the servo motor is in 0 degree position. When the correct RFID card of tag comes in close proximity of the reader module the the reader module sends signal to the Arduino. The arduino, acting as the middle man turns the state of the red led to OFF and turns on the Green LED, also rotating the servo by 90 degree. Then if the switch is not opened within 9 seconds of granting access it will automatically return back to its initial st ate. Else if the switch is closed, then it will not go back to its original state unless and until it i s opened again after 9 seconds.

Things used:

- RFID RC522 module
- Piezo buzzer
- SG90 micro servo
- Arduino uno R3
- Resistors (330 ohms)
- LEDs(1 green and red each)
- Connecting wires (preferebly jumpers)
- Switch
- BreadBoard

Connections:

- RFID RST/Reset pin is connected to arduino 8th pin
- RFID SDA pin connected to arduino 10th pin
- RFID MOSI pin is connected to arduino 11th pin
- RFID MISO pin is connected to arduino 12th pin
- RFID SCK pin is connected to arduino 13th pin
- Connect the VCC of the RFID module to 3.3V Arduino voltage pin
- Connect the ground pin of the RFID module to one of the ground pins of arduino
- Connect a red led to pin number 5
- Connect a green led to pin number 3
- Connect a buzzer to pin number 6
- Connect a switch to pin number 7

*Error may occur due to insufficient input voltage from switch or output overload. In such a case bump up the input voltage or use a transistor switch in case of servo.

*The code is be inculded in a seperate file along with a video of the working.