# EXPERIMENT 20: ALERT SYSTEM USING TAG

**Objective:** The objective of this experiment is to create an alert system using an RFID tag. The system should detect the RFID tag, and upon detection, it sends a message to a Bluetooth app. Additionally, the robot can be controlled to move forward when a button is pressed.

**Setup:**

- Assemble the robot hardware according to the instructions in Section 2.1.
- Connect the robot to the Arduino IDE as explained in Section 2.3.
- Establish the following hardware connections:

**RFID Reader:**

For detailed instructions on connecting the RFID reader to the Arduino, please refer to the following link provided :RFID reader to the Arduino . Follow this link to download the library MFRC522.

- SS_PIN: Connect to digital pin 10.
- RST_PIN: Connect to digital pin 5. for the

**Bluetooth Module:**

- RX_PIN: Connect to digital pin 1.
- TX_PIN: Connect to digital pin 0.

**Motor A:**

- IN1: Connect to digital pin 8.
- IN2: Connect to digital pin 9.

**Motor B:**

- IN3: Connect to digital pin 10.
- IN4: Connect to digital pin 11.

**Push Button:**

- BUTTON_PIN: Connect to digital pin 7.

- Initialize the RFID reader, Bluetooth communication, and motor pins in the setup.

**Code Example: Alert System Using RFID Tag**

**Usage Instructions:**

- Power the robot and ensure it is connected to the Arduino.
- Bring an RFID tag close to the RFID reader and tap it.
- If the RFID tag is detected, the UID will be displayed on the serial monitor, and a message will be sent to the Bluetooth app saying "Robo passes."
- Press and hold the push button to move the robot forward.
- Release the push button to stop the robot.

**Expected Results:**

- The system should respond to the RFID tag by sending a message to the Bluetooth app.
- Pressing the push button should make the robot move forward, and releasing the button should stop the robot.

**FAQs:**

**Q: How do I ensure the RFID tag is detected?**
**A:** Bring the RFID tag close to the RFID reader and tap it. Check the serial monitor for UID information.
**Q: Can I customize the message sent to the Bluetooth app?**
**A:** Yes, modify the **bluetoothSerial.println("Robo passes");** line in the code for different messages.
**Q: How can I modify the code for different motor speeds?**
**A:** Adjust the PWM values (e.g., **analogWrite(ENA, 200) ;)** for both motors based on your speed requirements.