# Circuit Documentation

## Summary

This circuit is designed to interface an Arduino UNO with a pushbutton, a rotary potentiometer, a buzzer, and a servo motor. The Arduino UNO serves as the central microcontroller, reading inputs from the pushbutton and potentiometer, and controlling the buzzer and servo motor. The circuit is powered by the Arduino's 5V output.

## Component List

1. **Pushbutton**
   * **Description**: A simple pushbutton switch used to provide user input to the Arduino.
   * **Pins**: Pin 1 (in), Pin 2 (in), Pin 3 (out), Pin 4 (out)
2. **Arduino UNO**
   * **Description**: A microcontroller board based on the ATmega328P, used to control the circuit.
   * **Pins**: UNUSED, IOREF, Reset, 3.3V, 5V, GND, Vin, A0, A1, A2, A3, A4, A5, SCL, SDA, AREF, D13, D12, D11, D10, D9, D8, D7, D6, D5, D4, D3, D2, D1, D0
3. **Buzzer (pin space)**
   * **Description**: An audio signaling device that produces sound when powered.
   * **Pins**: VCC, GND
4. **Rotary Potentiometer**
   * **Description**: A variable resistor used to provide analog input to the Arduino.
   * **Pins**: leg1, wiper, leg2
   * **Properties**: Resistance - 10,000 Ohms
5. **Servo**
   * **Description**: A motor that can be precisely controlled to rotate to a specific angle.
   * **Pins**: gnd, vcc, pulse

## Wiring Details

### Pushbutton

* **Pin 1 (in)** is connected to **Arduino UNO D2**.
* **Pin 4 (out)** is connected to **Arduino UNO GND**.

### Arduino UNO

* **5V** is connected to **Rotary Potentiometer leg2** and **Servo vcc**.
* **GND** is connected to **Pushbutton Pin 4 (out)**, **Rotary Potentiometer leg1**, **Buzzer VCC**, and **Servo gnd**.
* **A0** is connected to **Rotary Potentiometer wiper**.
* **D2** is connected to **Pushbutton Pin 1 (in)**.
* **D3** is connected to **Buzzer GND**.
* **D9** is connected to **Servo pulse**.

### Buzzer (pin space)

* **VCC** is connected to **Arduino UNO GND**.
* **GND** is connected to **Arduino UNO D3**.

### Rotary Potentiometer

* **leg1** is connected to **Arduino UNO GND**.
* **wiper** is connected to **Arduino UNO A0**.
* **leg2** is connected to **Arduino UNO 5V**.

### Servo

* **gnd** is connected to **Arduino UNO GND**.
* **vcc** is connected to **Arduino UNO 5V**.
* **pulse** is connected to **Arduino UNO D9**.

## Documented Code

### Arduino UNO Code

void setup() {  
 // put your setup code here, to run once:  
  
}  
  
void loop() {  
 // put your main code here, to run repeatedly:  
  
}

This code is a basic template for the Arduino UNO. The setup() function is where you initialize any settings or configurations, and the loop() function is where the main logic of the program runs continuously. Currently, the code does not perform any specific operations and serves as a placeholder for further development.