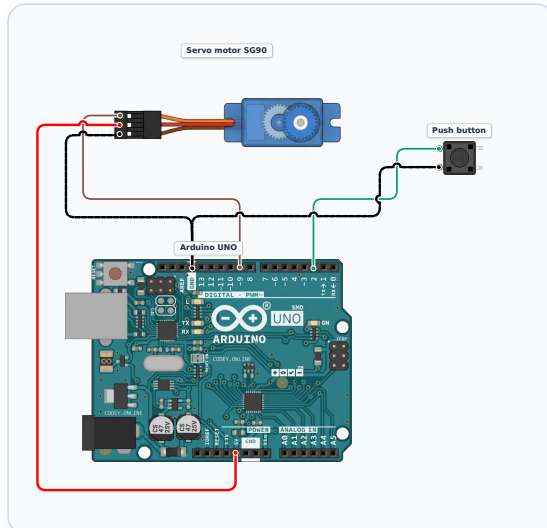


★★ Advanced beginner ⌚ 20 minutes

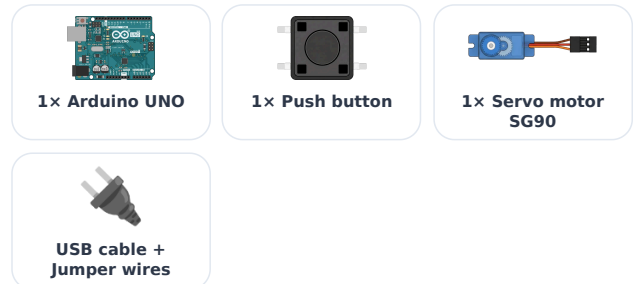
Barrier

You build a barrier, like at a parking garage. Press the button: the servo turns the barrier up, waits a little, and closes again.

Wiring diagram



What do you need?



This is how you build it

1. Put the push button across the gap in your breadboard: one leg to pin 2, and a leg on the other side to GND.
2. Connect the servo: orange to pin 9, red to 5V, and brown to GND.
3. Stick a straw or popsicle stick onto the arm of the servo: that is your barrier!

The code

```
// Barrier
// Press the button: the barrier (servo) goes up, waits a
// little, and closes again.

#include <Servo.h>

const int BUTTON_PIN = 2; // Push button on pin 2 (other side
// to GND)
const int SERVO_PIN = 9; // Orange/yellow wire of the servo
// on pin 9

const int CLOSED = 0; // Servo angle when the barrier is
// closed
const int OPEN = 90; // Servo angle when the barrier is
// open

Servo barrier;

void setup() {
  pinMode(BUTTON_PIN, INPUT_PULLUP);

  barrier.attach(SERVO_PIN);
  barrier.write(CLOSED); // Start with the barrier closed
}

void loop() {
  if (digitalRead(BUTTON_PIN) == LOW) { // Button pressed
    // Turn open slowly, degree by degree
    for (int angle = CLOSED; angle <= OPEN; angle++) {
      barrier.write(angle);
      delay(15);
    }
    delay(3000); // Open for 3 seconds:
    // the car drives through
    // Slowly close again
    for (int angle = OPEN; angle >= CLOSED; angle--) {
      barrier.write(angle);
      delay(15);
    }
  }
}
```

What does the code do?

- We use the `Servo` library. With `write()` you tell the servo which angle to go to.
- After a button press, we turn degree by degree from 0 to 90. Nice and calm.
- After 3 seconds, we turn back to 0: the barrier is closed.

Try this...

- Make the barrier open and close faster
- Make a buzzer beep while the barrier is moving
- Turn on a red LED when the barrier is closed and a green one when it is open

🚀 Build this project with Codey: open codey.online/starter-kits/uno/projects/barrier and click MAKE THIS. Then the code and the wiring diagram are ready right away.