AZIA Robotics
Lesson 7 - Servo

website: **aziarobotics.github.io**
tinkercad.com class code: **ALD 5WB V3J**

Servo motors are a type of electric motor.
They are made such that they can rotate to any specific rotation from 0 to 180 degrees.
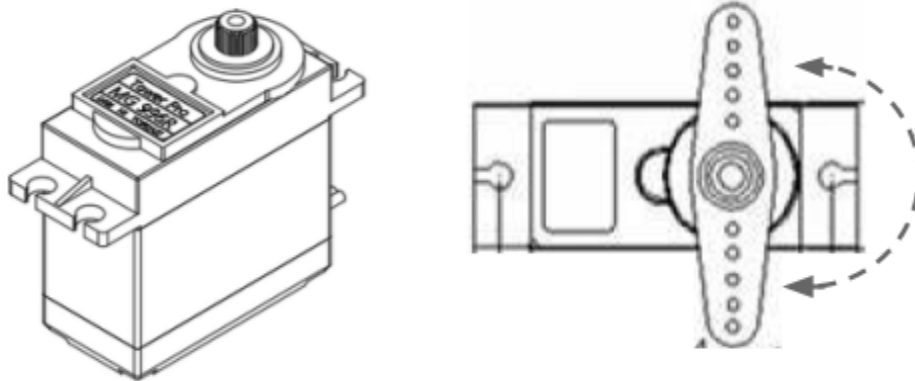
Servos can be used for moving robot arms and for steering remote control cars and planes!

The servo in your kit has 3 wires.
1. The brown should be connected to the **GND pin** of the Uno.
2. The red is power and should be connected to the **5v pin** of the Uno.
3. The orange is signal and should be connected to one of the PWM pins on the Uno. The PWM pins are the ones that have ~ beside their number. For example ~**9**

Your servo also comes with plastic arms called control "**Horns**". They can be used to attach the servo to whatever thing you want the servo to move.

Activity - Control a Servo with Uno

Now, go ahead and build the servo control circuit. Then write the code and upload it to your Uno.

The code here, controls the servo that is attached to pin ~9:
It first rotates it to 0 degrees, and while it is rotating, it waits for 2 seconds.
It then rotates it to 180 degrees, and again waits for 2 seconds.

Note: If you don't wait long enough, and before the servo finishes completing the previous rotation you ask it to rotate to a different angle, it will ignore the previous rotation and move to the new angle.
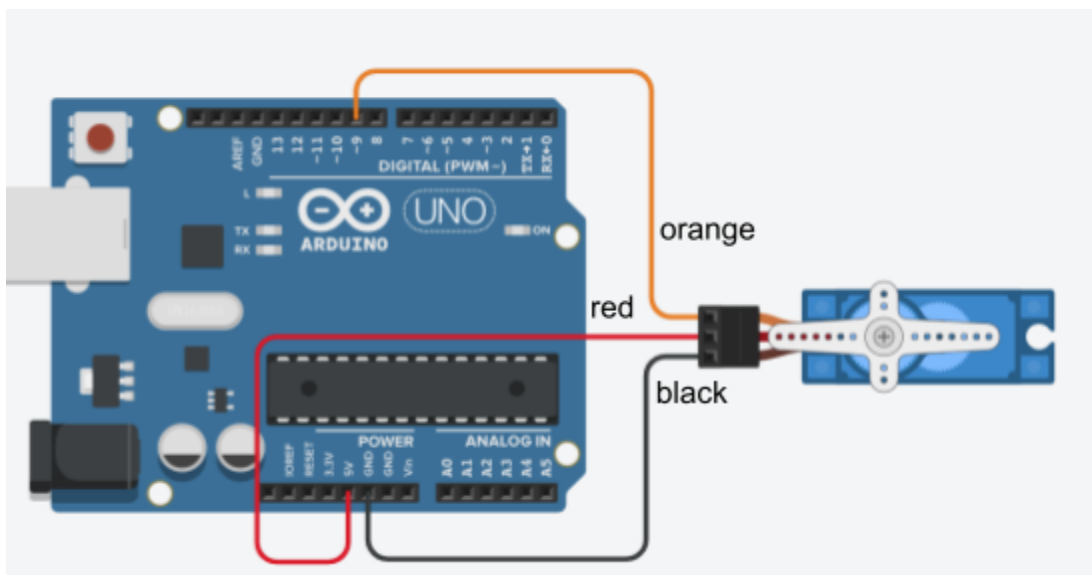

```cpp
1   // C++ code
2   //
3   #include <Servo.h>
4
5   int pos = 0;
6
7   Servo servo_9;
8
9   void setup()
10  {
11    servo_9.attach(9, 500, 2500);
12  }
13
14  void loop()
15  {
16    servo_9.write(0);
17    delay(2000); // Wait for 2000 millisecond(s)
18    servo_9.write(180);
19    delay(2000); // Wait for 2000 millisecond(s)
20  }
```