```
#include <Servo.h>
#include <PS2X_lib.h>           //for v1.6
#include <AFMotor.h>
AF_DCMotor motor1(3);
AF_DCMotor motor2(4);
AF_DCMotor motor3(2);        //this motor is for the projectile launcher
Servo myservo;
Servo rotater;

#define PS2_DAT   A5
#define PS2_CMD   A4
#define PS2_SEL   A2
#define PS2_CLK   A1
#define pressures   false
#define rumble      true

//pin numbers are changeable as long as wiring is done properly

PS2X ps2x;

//Above is all the initial setup for the RC tank's movement

int error = 0;
byte type = 0;
byte vibrate = 0;
int const trigPin = 13;
int const echoPin = 12;

long duration;
int distance;

//Above is all the initial setup for the ultrasonic sensor

void setup() {
  Serial.begin(57600);

  delay(1);  //added delay to give wireless ps2 module some time to startup, before configuring it


  error = ps2x.config_gamepad(PS2_CLK, PS2_CMD, PS2_SEL, PS2_DAT, pressures,
rumble);

  if (error == 0) {
```

```
   Serial.print("Found Controller, configured successful ");
   Serial.print("pressures = ");
   if (pressures)
     Serial.println("true ");
   else
     Serial.println("false");
   Serial.print("rumble = ");
   if (rumble)
     Serial.println("true)");
   else
     Serial.println("false");
   Serial.println("Try out all the buttons, X will vibrate the controller, faster as you press
harder;");
   Serial.println("holding L1 or R1 will print out the analog stick values.");
   Serial.println("Note: Go to www.billporter.info for updates and to report bugs.");
  }

  else if (error == 1)
   Serial.println("No controller found, check wiring, see readme.txt to enable debug. visit
www.billporter.info for troubleshooting tips");

  else if (error == 2)
   Serial.println("Controller found but not accepting commands. see readme.txt to enable debug.
Visit www.billporter.info for troubleshooting tips");

  else if (error == 3)
   Serial.println("Controller refusing to enter Pressures mode, may not support it. ");

  //  Serial.print(ps2x.Analog(1), HEX);

  type = ps2x.readType();
  switch (type) {
   case 0:
     Serial.print("Unknown Controller type found ");
     break;
   case 1:
     Serial.print("DualShock Controller found ");
     break;
   case 2:
     Serial.print("GuitarHero Controller found ");
     break;
   case 3:
     Serial.print("Wireless Sony DualShock Controller found ");
```

```
      break;
  }
  motor1.setSpeed(200);

  motor2.setSpeed(200);

  motor3.setSpeed(250);

  pinMode(trigPin, OUTPUT);
  pinMode(echoPin, INPUT);

myservo.attach (9);

rotater.attach (10);

}


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

  if (error == 1) //skip loop if no controller found
    return;

 // The code below is for the ultrasonic sensor to work, to detect objects
  digitalWrite(trigPin, LOW);
  delayMicroseconds(2);

  digitalWrite(trigPin, HIGH);

  duration = pulseIn(echoPin, HIGH);
  distance = duration * 0.034 / 2;

  Serial.print("Distance: ");
  Serial.println(distance);



  if (type == 1) { //if controller is found


    ps2x.read_gamepad(false, vibrate);
```

```
if (ps2x.ButtonPressed(PSB_CROSS)) {
  motor1.run(BACKWARD);
  motor2.run(BACKWARD);
  //the tank moves backwards
}
if (ps2x.ButtonReleased(PSB_CROSS)) {
  motor1.run(RELEASE);
  motor2.run(RELEASE);
  //the tank stops moving
}

if (ps2x.Button(PSB_CIRCLE)) {
  motor2.run(FORWARD);
  motor1.run(BACKWARD);
   //the tank rotates right
}
if (ps2x.ButtonReleased(PSB_CIRCLE)) {
  motor1.run(RELEASE);
  motor2.run(RELEASE);
  //the tank stops moving
}

if (ps2x.Button(PSB_SQUARE)) {
  motor2.run(BACKWARD);
  motor1.run(FORWARD);
  //the tank rotates left
}
if (ps2x.ButtonReleased(PSB_SQUARE)) {
  motor1.run(RELEASE);
  motor2.run(RELEASE);
  //the tank stops moving

}

if (ps2x.Button(PSB_R1)) {
  motor1.run(FORWARD);
  //the tank moves it's right motor forward
}

if (ps2x.ButtonReleased(PSB_R1)) {
  motor1.run(RELEASE);
  //the tank stops moving
```

```
  }

  if (ps2x.Button(PSB_L1)) {
    motor2.run(FORWARD);
    //the tank moves it's left motor forward
  }

  if (ps2x.ButtonReleased(PSB_L1)) {
    motor2.run(RELEASE);
    //the tank stops moving
  }

  if (ps2x.Button(PSB_R2)) {
    motor1.run(BACKWARD);
    //the tank moves it's right motor backward
  }

  if (ps2x.ButtonReleased(PSB_R2)) {
    motor1.run(RELEASE);
    //the tank stops moving
  }


  if (ps2x.Button(PSB_L2)) {
    motor2.run(BACKWARD);
    //the tank moves it's left motor backward
  }

  if (ps2x.ButtonReleased(PSB_L2)) {
    motor2.run(RELEASE);
    //the tank stops moving
  }


  if (ps2x.ButtonPressed(PSB_TRIANGLE)) {
    motor1.run(FORWARD);
    motor2.run(FORWARD);
    //the tank moves forward
  }

 if (distance <= 10 && distance >= 0) { //the 10 is the distance when the ultrasonic sensor
would detect an object
```

```
    motor1.run(BACKWARD);
    motor2.run(BACKWARD);
   //the tank moves back when an object is within 10cm of the sensor

  if (distance >= 10) {

    motor1.run(RELEASE);
    motor2.run(RELEASE);
    //when the object is no longer within 10cm, the tank stops

  }

  }

  }


  if (ps2x.ButtonReleased(PSB_TRIANGLE)) {
    motor1.run(RELEASE);
    motor2.run(RELEASE);
    //the tank stops moving

  }

  if (ps2x.Button(PSB_PAD_UP)) {//this is the shoot button
    motor3.run(FORWARD);
    myservo.write (90); //this is for reloader, reloader opens

    }

    if (ps2x.ButtonReleased(PSB_PAD_UP)) {//shooting stops
      motor3.run(RELEASE);
      myservo.write (0); //reloader closes

    }



 delay(1);

}
```