Lab 6: Program 13

Date: 28/10/20

Experiment: Servo and IR

Aim: Control a Servo Motor using an IR Remote and Sensor.

Hardware:

- Servo motor
- Arduino Uno
- LEDs
- Resistors
- IR sensor and remote

Source Code:

```
#include<IRremote.h>
#include<Servo.h>
int pos = 0 , irsensor = 9 , val = 1 , flag = 0 ;
IRrecv irinput (irsensor);
Decode_results results;
Servo smotor;
void setup(){
  Serial.begin(9600);
  pinMode(irsensor, INPUT);
  irinput.enableIRIn();
  Serial.println("Power is off");
}
void pwr ()
{
    if (flag == 0)
    {
    smotor.attach(11);
        Serial.println("Power on");
        flag = 1;
    }
```

```
else if (flag == 1)
    smotor.detach();
        Serial.println("Power off");
    flag = 0;
    }
}
void loop()
{
  if (irinput.decode(&results))
  {
    Serial.println(results.value, HEX);
    irinput.resume();
  }
  switch(results.value)
  {
    case 0xFD00FF:
      pwr();
      break ;
    }
    case 0xFD807F :
    {
      if (abs(val) >= 10)
      {
        Serial.println("Maximum speed");
      }
      else
      {
        val = val > 0 ? val + 1 : val - 1 ;
        Serial.println("Speed increased");
      }
      break ;
    case 0xFD906F :
```

```
{
    if (abs(val) <= 1)
    {
      Serial.println("Minimum speed");
    }
    else
    {
      val = val > 0 ? val - 1 : val + 1 ;
      Serial.println("Speed decreased");
    }
    break;
  }
  case 0xFD20DF :
  {
    val = -abs(val);
    Serial.println("Anti-clockwise");
    break;
  }
  case 0xFD609F:
    val = abs(val);
    Serial.println("Clockwise");
    break;
  }
  default: Serial.println("No Function");
if (flag == 1)
{
  if(pos >= 180 )
  {
    val = -val ;
  }
  else if ( pos <= 0)
  {
  val = abs(val);
  }
```

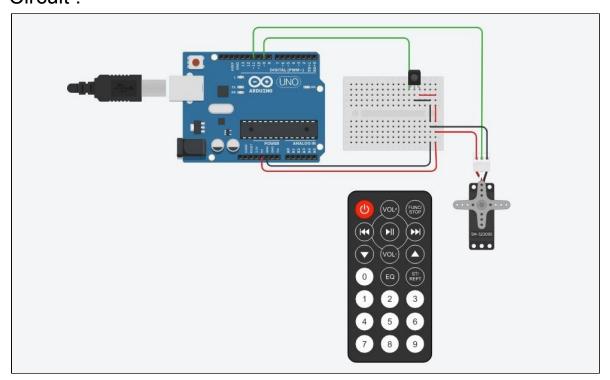
}

```
pos += val;
smotor.write(pos);
Serial.println(pos);
delay(25);
}

results.value = NULL;
delay(50);
}
```

Observation: The servo motor rotates as the IR input is received.

Circuit:



Write Up:

```
Servo and IR
IOT Lab 6
Source Code
 #include < I Rremote h>
 #include & Servo. h>
 int pos = 0;
 int irsenson = 9;
 Il rew irinput (irsenson);
decode-results results;
 Servo smotor;
 int val = 1;
 int flag = 0;
 Void Setup ()
    Serial-begin (9600);
    pin Mode (issensor, INPUT);
    irinput. enable IRIn ();
   Serial. println ("Power is off");
 void pwr ()
    if ( flag ==0)
    2 smotor attach (11);
      Serial. printin ("Power on");
    else if (flag = = 1)
      Smotor. detach ();
      Serial . printh ("Power Off");
```

```
void loop ()
  of (irinput decode (& results))
     Serial println (results value, HEX);
     irinfut. resume ();
  Switch ( Results value)
 { case OxFDOOFF ? pwal);
    Case Ox FD 807F : 1
                         if (abs (val) >= 10)
                         & Serial println ("Maximum spent");
                        of val = val > 0 ? val + 1 : val -1;
                         Suid punlin (" Speed incheosed");
                        I break;
    case OxF0906F: { if (abs(val) <= 1)
                        { Serial println ("Minimum speed")
                         h val = val 70 ? val -1; val +1;
                          Suid paintin ("Speed decreased")
                        I break;
    Case Ox FD 200F: {
                         val = - abs(val);
                           Seried. plintln ("Articlockwise");
                           dreak;
                          val = als (val);
    Case 0x FD 609F: 1
                         Serial paintly ("Clockwise");
                       y break;
  default: Serial print In (" No function ");
```

```
elley (pos <= 0)
   { val = abs(val);
   pos + val;
   Sanotas . white (pos);
  delay (25);
results value = NULL;
delay (50);
```