**Robotic Arm Vehicle – Project Code**

**//Receiver signal pins**

double ch1\_pin = 3; //PWM pin

double ch2\_pin = 5; //PWM pin

**//Right motor driver pins**

int R\_EN\_right = 2;

int L\_EN\_right = 4;

int R\_PWM\_right = 6; //PWM pin

int L\_PWM\_right = 9; //PWM pin

**//Left motor driver pins**

int R\_EN\_left = 7;

int L\_EN\_left = 8;

int R\_PWM\_left = 10; //PWM pin

int L\_PWM\_left = 11; //PWM pin

**// ------ Rx threshold values - Update based on your TX values**

//FWD

int Ch1Ch2\_start\_Fwd = 1530;

int Ch1Ch2\_End\_Fwd = 1980;

**//BACK**

int Ch1Ch2\_start\_Bac = 1460;

int Ch1Ch2\_End\_Bac = 960;

// ----------------------------------

void setup()

{

Serial.begin(9600);

pinMode(3,INPUT);

pinMode(5,INPUT);

pinMode(2,OUTPUT);

pinMode(4,OUTPUT);

pinMode(6,OUTPUT);

pinMode(9,OUTPUT);

pinMode(7,OUTPUT);

pinMode(8,OUTPUT);

pinMode(10,OUTPUT);

pinMode(11,OUTPUT);

}

void loop()

{

//Receiver signal pins data

double ch1 = pulseIn(3,HIGH);

double ch2 = pulseIn(5,HIGH);

Serial.print("ch1: ");

Serial.println(ch1);

//Serial.print("\t");

//Serial.print("ch2: ");

//Serial.print(ch2);

//Serial.println("");

**//Speed mapping for right motor driver**

int spdFwd\_RightLeft = map(ch1, Ch1Ch2\_start\_Fwd, Ch1Ch2\_End\_Fwd, 0, 255);

int spdBac\_RightLeft = map(ch1, Ch1Ch2\_start\_Bac, Ch1Ch2\_End\_Bac, 0, 255);

digitalWrite(R\_EN\_right, HIGH);

digitalWrite(L\_EN\_right, HIGH);

digitalWrite(R\_EN\_left, HIGH);

digitalWrite(L\_EN\_left, HIGH);

if((ch1==0)&&(ch2==0))

{

analogWrite(R\_PWM\_right,0);

analogWrite(L\_PWM\_right,0);

analogWrite(R\_PWM\_left,0);

analogWrite(L\_PWM\_left,0);

}

**//FWD**

else if((ch1>Ch1Ch2\_start\_Fwd)&&(ch2>Ch1Ch2\_start\_Fwd))

{

analogWrite(R\_PWM\_right,spdFwd\_RightLeft);

analogWrite(L\_PWM\_right,0);

analogWrite(R\_PWM\_left,spdFwd\_RightLeft);

analogWrite(L\_PWM\_left,0);

}

**//RIGHT**

else if((ch1>Ch1Ch2\_start\_Fwd)&&(ch2<Ch1Ch2\_start\_Bac))

{

analogWrite(R\_PWM\_right,0);

analogWrite(L\_PWM\_right,spdFwd\_RightLeft);

analogWrite(R\_PWM\_left,spdFwd\_RightLeft);

analogWrite(L\_PWM\_left,0);

}

**//LEFT**

else if((ch1<Ch1Ch2\_start\_Bac)&&(ch2>Ch1Ch2\_start\_Fwd))

{

analogWrite(R\_PWM\_right,spdBac\_RightLeft);

analogWrite(L\_PWM\_right,0);

analogWrite(R\_PWM\_left,0);

analogWrite(L\_PWM\_left,spdBac\_RightLeft);

}

**//BACK**

else if((ch1<Ch1Ch2\_start\_Bac)&&(ch2<Ch1Ch2\_start\_Bac))

{

analogWrite(R\_PWM\_right,0);

analogWrite(L\_PWM\_right,spdBac\_RightLeft);

analogWrite(R\_PWM\_left,0);

analogWrite(L\_PWM\_left,spdBac\_RightLeft);

}

else

{

analogWrite(R\_PWM\_right,0);

analogWrite(L\_PWM\_right,0);

analogWrite(R\_PWM\_left,0);

analogWrite(L\_PWM\_left,0);

}

}