**BELOW I HAVE PROVIDED SOME ARDUINO CODE FOR EASE OF UNDERSTANDING –**

int motor1Pin1 = 3;

int motor1Pin2 = 4;

int motor2Pin1 = 11;

int motor2Pin2 = 10;

int state;

int flag=0; **//makes sure that the serial only prints once the state**

int stateStop=0;

void setup() {

**// sets the pins as outputs:**

pinMode(motor1Pin1, OUTPUT);

pinMode(motor1Pin2, OUTPUT);

pinMode(motor2Pin1, OUTPUT);

pinMode(motor2Pin2, OUTPUT);

**// initialize serial communication at 9600 bits per second:**

Serial.begin(9600);

}

void loop() {

**// if some data is sent, reads it and saves in state**

if(Serial.available() > 0){

state = Serial.read();

flag=0;

}

**// if the state is 'A' the DC motor will go forward**

if (state == 'A') {

digitalWrite(motor1Pin1, HIGH);

digitalWrite(motor1Pin2, LOW);

digitalWrite(motor2Pin1, LOW);

digitalWrite(motor2Pin2, HIGH);

if(flag == 0){

Serial.println("Go Forward!");

flag=1;

}

}

**// if the state is 'C' the motor will turn left**

else if (state == 'C') {

digitalWrite(motor1Pin1, HIGH);

digitalWrite(motor1Pin2, LOW);

digitalWrite(motor2Pin1, LOW);

digitalWrite(motor2Pin2, LOW);

if(flag == 0){

Serial.println("Turn LEFT");

flag=1;

}

delay(100);

state=3;

stateStop=1;

}

**// if the state is 'E' the motor will Stop**

else if (state == 'E' || stateStop == 1) {

digitalWrite(motor1Pin1, LOW);

digitalWrite(motor1Pin2, LOW);

digitalWrite(motor2Pin1, LOW);

digitalWrite(motor2Pin2, LOW);

if(flag == 0){

Serial.println("STOP!");

flag=1;

}

stateStop=0;

}

**// if the state is 'D' the motor will turn right**

else if (state == 'D') {

digitalWrite(motor1Pin1, LOW);

digitalWrite(motor1Pin2, LOW);

digitalWrite(motor2Pin1, LOW);

digitalWrite(motor2Pin2, HIGH);

if(flag == 0){

Serial.println("Turn RIGHT");

flag=1;

}

delay(100);

state=3;

stateStop=1;

}

**// if the state is 'B' the motor will Reverse**

else if (state == 'B') {

digitalWrite(motor1Pin1, LOW);

digitalWrite(motor1Pin2, HIGH);

digitalWrite(motor2Pin1, HIGH);

digitalWrite(motor2Pin2, LOW);

if(flag == 0){

Serial.println("Reverse!");

flag=1;

}

}

**//For debugging purpose**

//Serial.println(state);

}