/\* Arif 1703026, 23rd December, 2021

\* This is a sample code for simple operation of a footbot driven by a pair of BTS7960 modules

\* Necessary comments have been added for a better understanding

\* One may need to alter/change their motor connection(s) for desired direction of rotation,

\* Here it is assumed that right side motors are controlled by arduino pin 5 and 6

and left side motors are controlled by arduino pin 9 and 10, these are PWM pins

\* The bluetooth module is connected to arduino pin 0 and 1 for serial communication

\*/

void setup() {

Serial.begin(9600); //initializing serial communication(bluetooth module) at 9600 bps

pinMode(2,OUTPUT); //for first BTS L\_EN/R\_EN pin

pinMode(3,OUTPUT); //for first BTS L\_EN/R\_EN pin

pinMode(5,OUTPUT); //for first BTS L\_PWM/R\_PWM pin

pinMode(6,OUTPUT); //for first BTS L\_PWM/R\_PWM pin

pinMode(7,OUTPUT); //for second BTS L\_EN/R\_EN pin

pinMode(8,OUTPUT); //for second BTS L\_EN/R\_EN pin

pinMode(9,OUTPUT); //for second BTS L\_PWM/R\_PWM pin

pinMode(10,OUTPUT); //for second BTS L\_PWM/R\_PWM pin

}

void loop() {

digitalWrite(2, HIGH); //these are all R\_EN and L\_EN pins(2,3,7,8)

digitalWrite(3, HIGH);

digitalWrite(7, HIGH);

digitalWrite(8, HIGH);

if(Serial.available()>0) //checks if any serial port is connected and available

{

char letter=Serial.read(); //anything that is read in serial port is stored in a variable

Serial.println(letter); //displays it in serial monitor

if(letter=='F') //if 'F' comes from mobile (forward)

{

//goes forward

analogWrite(9, 255); //full forward drive for left side motors

analogWrite(10,0); //zero reverse drive for left side motors

analogWrite(5,255); //full forward drive for right side motors

analogWrite(6,0); //zero reverse drive for right side motors

//set your value in the range of 0-255 based on desired speed(0 > full stop, 255 > full rpm)

}

if((letter=='B')||(letter=='H')||(letter=='J')) //if 'B'/'J'/'H' comes from mobile(backward/left backward/right backward

{

//goes backward

analogWrite(9, 0); //zero forward drive for left side motors

analogWrite(10,255); //full reverse drive for left side motors

analogWrite(5,0); //zero forward drive for right side motors

analogWrite(6,255); //full reverse drive for right side motors

//set your value in the range of 0-255 based on desired speed(0 > full stop, 255 > full rpm)

}

if((letter=='R')||(letter=='I')) //if 'R'/'I' comes from mobile(right/forward right)

{

//turns right side

analogWrite(9, 255); //full forward drive for left side motors

analogWrite(10,0); //zero reverse frive for left side motors

analogWrite(5,0); //zero forward drive for right side motors

analogWrite(6,255); //full reverse drive for right side motors

//set your value in the range of 0-255 based on desired speed(0 > full stop, 255 > full rpm)

}

if((letter=='L')||(letter=='G')) //if 'L'/'G' comes from mobile(left/forward left)

{

//turns left side

analogWrite(9, 0); //zero forward drive for left side motors

analogWrite(10,255); //full reverse drive for left side motors

analogWrite(5,255); //full forward drive for right side motors

analogWrite(6,0); //zero reverse drive for right side motors

//set your value in the range of 0-255 based on desired speed(0 > full stop, 255 > full rpm)

}

if(letter=='S') //if 'S' comes from mobile(continuously comes if no button is pressed while connected)

{

//no motion

analogWrite(9, 0); //zero forward drive for left side motors

analogWrite(10,0); //zero reverse drive for left side motors

analogWrite(5,0); //zero forward drive for right side motors

analogWrite(6,0); //zero revers drive for right side motors

}

//that's it!

}

}