GitHub Link: <https://github.com/qluan3/ECE-445>

Arduino Code (in case it’s not on GitHub by the time this is uploaded):

#define in1 7

#define in2 6

#define in3 5

#define in4 4

#define enA 10

#define enB 11

#include <SoftwareSerial.h>

SoftwareSerial BT(12, 13);

void setup() {

  pinMode(in3, OUTPUT);

  pinMode(in4, OUTPUT);

  pinMode(enA, OUTPUT);

  pinMode(enB, OUTPUT);

  pinMode(in1, OUTPUT);

  pinMode(in2, OUTPUT);

  BT.begin(9600);

}

char a;

//FOR FORWARD AND BACKWARD, THERE WAS FRICTION IN THE LEFT WHEEL SO WE HAD TO SET THE DUTY CYCLES ACCORDINGLY TO COMPENSATE

void loop() {

  if (BT.available())

  {

    a=(BT.read());

    if (a=='0')

    {

      //STOP

      digitalWrite(in1, LOW);

      digitalWrite(in2, LOW);

      digitalWrite(in3, LOW);

      digitalWrite(in4, LOW);

    }

    if (a=='1')

    {

      //FORWARD

      digitalWrite(in1, HIGH);

      digitalWrite(in2, LOW);

      analogWrite(enA,  160);

      digitalWrite(in3, HIGH);

      digitalWrite(in4, LOW);

      analogWrite(enB,  192);

    }

    if (a=='2')

    {

      //LEFT

      digitalWrite(in1, HIGH);

      digitalWrite(in2, LOW);

      analogWrite(enA,  120);

      digitalWrite(in3, HIGH);

      digitalWrite(in4, LOW);

      analogWrite(enB, 255);

    }

   if (a=='3')

    {

    //RIGHT

    digitalWrite(in1, HIGH);

    digitalWrite(in2, LOW);

    analogWrite(enA, 255);

    digitalWrite(in3, HIGH);

    digitalWrite(in4, LOW);

    analogWrite(enB,  120);

   }

   if(a=='4')

   {

    //reverse

    digitalWrite(in1, LOW);

    digitalWrite(in2, HIGH);

    analogWrite(enA,  160);

    digitalWrite(in3, LOW);

    digitalWrite(in4, HIGH);

    analogWrite(enB,  192);

   }

   if(a=='6'){

      //reverse left

    digitalWrite(in1, LOW);

    digitalWrite(in2, HIGH);

    analogWrite(enA, 120);

    digitalWrite(in3, LOW);

    digitalWrite(in4, HIGH);

    analogWrite(enB,  255);

   }

   if(a=='5'){

    //reverseright

      digitalWrite(in1, LOW);

      digitalWrite(in2, HIGH);

      analogWrite(enA,  255);

      digitalWrite(in3, LOW);

      digitalWrite(in4, HIGH);

      analogWrite(enB, 120);

   }

  }

}