Glove Unit Arduino:

```
const int xpin = A0; // x-axis of the accelerometer

const int ypin = A1; // y-axis

const int numReadings = 40;

int readings1[numReadings];

int readings2[numReadings];// the readings from the analog input

int index = 0;// the index of the current reading

int total1 = 0;

int total2 = 0; // the running total

int average1 = 0;

int average2 = 0;// the average

int inputPin1 = xpin;

int inputPin2 = ypin;

float result1 = 0;

float result2 = 0;

int result3 = 0;

float result4 = 0;

float result5 = 0;

int result6 = 0;

int num0 = 0;

int num1 = 1;

int num2 = 2;

int num3 = 3;

int num4 = 4;

int num5 = 5;

int num6 = 6;

int num7 = 7;
```

```
int num8 = 8;

void setup(){

// initialize serial communication with computer:


Serial.begin(9600);

// initialize all the readings to 0:

for (int thisReading = 0; thisReading < numReadings; thisReading++)

readings1[thisReading] = 0;

for (int thisReading = 0; thisReading < numReadings; thisReading++)

readings2[thisReading] = 0;

}

void loop(){

// subtract the last reading:

total1= total1 - readings1[index];

total2= total2 - readings2[index];

// read from the sensor:

readings1[index] = analogRead(inputPin1);

readings2[index] = analogRead(inputPin2);

// add the reading to the total:

total1= total1 + readings1[index];

total2= total2 + readings2[index];

// advance to the next position in the array:

index = index + 1;

// if we're at the end of the array...

if (index >= numReadings)

// ...wrap around to the beginning:

index = 0;
```

```
// calculate the average:
average1 = total1 / numReadings;
average2 = total2 / numReadings;
// send it to the computer (as ASCII digits)
result1 = (average1 - 318)/(float)159;
if(result1>1)result1=1;
if(result1<-1)result1=-1;
result2 = asin(result1);
result3 = result2 * 57.32;
result4 = (average2 - 344)/(float)172;
if(result4>1)result4=1;
if(result4<-1)result4=-1;
result5 = asin(result4);
result6 = result5 * 57.32;
////////////Transmission/////////
if(result3 >= -10 && result3 <=10){
Serial.print(num0);
}
////////Forward/////////
if(result3 >= 11 && result3 <= 20){
Serial.print(num1);

}
if(result3 >= 21 && result3 <= 30){
Serial.print(num2);
}
if(result3 >= 31 && result3 <= 40){
```

```
Serial.print(num3);
}
if(result3 >= 41 && result3 <= 50){
Serial.print(num4);
}
if(result3 >= 51 && result3 <= 60){
Serial.print(num5);
}
if(result3 >= 61 && result3 <= 70){
Serial.print(num6);
}
if(result3 >= 71 && result3 <= 80){
Serial.print(num7);
}
if(result3 >= 81 && result3 <= 90){
Serial.print(num8);
}
////////////Backward////////////
if(result3 >= -20 && result3 <= -11){
Serial.print("a");
}
if(result3 >= -30 && result3 <= -21){
Serial.print("b");
}
if(result3 >= -40 && result3 <= -31){
Serial.print("c");
}
```

```
if(result3 >= -50 && result3 <= -41){
Serial.print("d");
}
if(result3 >= -60 && result3 <= -51){
Serial.print("e");
}
if(result3 >= -70 && result3 <= -61){
Serial.print("f");
}
if(result3 >= -80 && result3 <= -71){
Serial.print("g");
}
if(result3 >= -90 && result3 <= -81){
Serial.print("h");
}
////////////////Left//////////////
if(result6 >= 11 && result6 <= 20){
Serial.print("i");
}

if(result6 >= 21 && result6 <= 30){
Serial.print("j");
}
if(result6 >= 31 && result6 <= 40){
Serial.print("k");
}
if(result6 >= 41 && result6 <= 50){
```

```
Serial.print("l");
}
if(result6 >= 51 && result6 <= 60){
Serial.print("m");
}
if(result6 >= 61 && result6 <= 70){
Serial.print("n");
}
if(result6 >= 71 && result6 <= 80){
Serial.print("o");
}
if(result6 >= 81 && result6 <= 90){
Serial.print("p");
}
////////////Right////////////////
if(result6 >= -20 && result6 <= -11){
Serial.print("q");
}
if(result6 >= -30 && result6 <= -21){
Serial.print("r");
}
if(result6 >= -40 && result6 <= -31){
Serial.print("s");
}
if(result6 >= -50 && result6 <= -41){
Serial.print("t");
}
```

```
if(result6 >= -60 && result6 <= -51){
Serial.print("u");
}
if(result6 >= -70 && result6 <= -61){
Serial.print("v");
}
if(result6 >= -80 && result6 <= -71){
Serial.print("w");
}
if(result6 >= -90 && result6 <= -81){
Serial.print("x");
}
}
```

Bot Unit Arduino:

```
char incomingByte = 0;

int motorpin1 = 6;
int motorpin2 = 9;
int motorpin3 = 10;
int motorpin4 = 11;
void setup(){
Serial.begin(9600);
pinMode(motorpin1,OUTPUT);
pinMode(motorpin2,OUTPUT);
pinMode(motorpin3,OUTPUT);
pinMode(motorpin4,OUTPUT);
}
```

```
void motorstop(){
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,0);
digitalWrite(motorpin3,LOW);
analogWrite(motorpin4,0);
}
void forward1(){
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,32);
digitalWrite(motorpin3,LOW);
analogWrite(motorpin4,32);
}
void forward2(){
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,64);
digitalWrite(motorpin3,LOW);
analogWrite(motorpin4,64);
}
void forward3(){
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,96);
digitalWrite(motorpin3,LOW);
analogWrite(motorpin4,96);
}
void forward4(){
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,128);
```

```
digitalWrite(motorpin3,LOW);
analogWrite(motorpin4,128);
}
void forward5(){
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,160);
digitalWrite(motorpin3,LOW);
analogWrite(motorpin4,160);
}
void forward6(){
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,192);
digitalWrite(motorpin3,LOW);

analogWrite(motorpin4,192);
}
void forward7(){
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,224);
digitalWrite(motorpin3,LOW);
analogWrite(motorpin4,224);
}
void forward8(){
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,255);
digitalWrite(motorpin3,LOW);
analogWrite(motorpin4,255);
```

```
}
void backward1(){
analogWrite(motorpin1,32);
digitalWrite(motorpin2,LOW);
analogWrite(motorpin3,32);
digitalWrite(motorpin4,LOW);
}
void backward2(){
analogWrite(motorpin1,64);
digitalWrite(motorpin2,LOW);
analogWrite(motorpin3,64);
digitalWrite(motorpin4,LOW);
}
void backward3(){
analogWrite(motorpin1,96);
digitalWrite(motorpin2,LOW);
analogWrite(motorpin3,96);
digitalWrite(motorpin4,LOW);
}
void backward4(){
analogWrite(motorpin1,128);
digitalWrite(motorpin2,LOW);
analogWrite(motorpin3,128);
digitalWrite(motorpin4,LOW);
}
void backward5(){
analogWrite(motorpin1,160);
```

```
digitalWrite(motorpin2,LOW);
analogWrite(motorpin3,160);
digitalWrite(motorpin4,LOW);
}
void backward6(){
analogWrite(motorpin1,192);
digitalWrite(motorpin2,LOW);
analogWrite(motorpin3,192);
digitalWrite(motorpin4,LOW);
}
void backward7(){
analogWrite(motorpin1,224);
digitalWrite(motorpin2,LOW);
analogWrite(motorpin3,224);

digitalWrite(motorpin4,LOW);
}
void backward8(){
analogWrite(motorpin1,255);
digitalWrite(motorpin2,LOW);
analogWrite(motorpin3,255);
digitalWrite(motorpin4,LOW);
}
void left1(){
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,32);
analogWrite(motorpin3,32);
```

```
digitalWrite(motorpin4,LOW);
}
void left2(){
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,64);
analogWrite(motorpin3,64);
digitalWrite(motorpin4,LOW);
}
void left3(){
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,96);
analogWrite(motorpin3,96);
digitalWrite(motorpin4,LOW);
}
void left4(){
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,128);
analogWrite(motorpin3,128);
digitalWrite(motorpin4,LOW);
}
void left5(){
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,160);
analogWrite(motorpin3,160);
digitalWrite(motorpin4,LOW);
}
void left6(){
```

```
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,192);
analogWrite(motorpin3,192);
digitalWrite(motorpin4,LOW);
}
void left7(){
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,224);
analogWrite(motorpin3,224);
digitalWrite(motorpin4,LOW);
}
void left8(){
digitalWrite(motorpin1,LOW);
analogWrite(motorpin2,255);

analogWrite(motorpin3,255);
digitalWrite(motorpin4,LOW);
}
void right1(){
analogWrite(motorpin1,32);
digitalWrite(motorpin2,LOW);
digitalWrite(motorpin3,LOW);
analogWrite(motorpin4,32);
}
void right2(){
analogWrite(motorpin1,64);
digitalWrite(motorpin2,LOW);
```

```
digitalWrite(motorpin3,LOW);
analogWrite(motorpin4,64);
}
void right3(){
analogWrite(motorpin1,96);
digitalWrite(motorpin2,LOW);
digitalWrite(motorpin3,LOW);
analogWrite(motorpin4,96);
}
void right4(){
analogWrite(motorpin1,128);
digitalWrite(motorpin2,LOW);
digitalWrite(motorpin3,LOW);
analogWrite(motorpin4,128);
}
void right5(){
analogWrite(motorpin1,160);
digitalWrite(motorpin2,LOW);
digitalWrite(motorpin3,LOW);
analogWrite(motorpin4,160);
}
void right6(){
analogWrite(motorpin1,192);
digitalWrite(motorpin2,LOW);
digitalWrite(motorpin3,LOW);
analogWrite(motorpin4,192);
}
```

```
void right7(){
analogWrite(motorpin1,224);
digitalWrite(motorpin2,LOW);
digitalWrite(motorpin3,LOW);
analogWrite(motorpin4,224);
}
void right8(){
analogWrite(motorpin1,255);
digitalWrite(motorpin2,LOW);
digitalWrite(motorpin3,LOW);
analogWrite(motorpin4,255);
}
void loop(){
while(!Serial.available());
if (Serial.available() > 0) {
incomingByte = Serial.read();
Serial.flush();
if(incomingByte == '0') motorstop();
if(incomingByte == 'a') forward1();
if(incomingByte == 'b') forward2();
if(incomingByte == 'c') forward3();
if(incomingByte == 'd') forward4();
if(incomingByte == 'e') forward5();
if(incomingByte == 'f') forward6();
if(incomingByte == 'g') forward7();
if(incomingByte == 'h') forward8();
if(incomingByte == '1') backward1();
```

```
if(incomingByte == '2') backward2();

if(incomingByte == '3') backward3();

if(incomingByte == '4') backward4();

if(incomingByte == '5') backward5();

if(incomingByte == '6') backward6();

if(incomingByte == '7') backward7();

if(incomingByte == '8') backward8();

if(incomingByte == 'q') left1();

if(incomingByte == 'r') left2();

if(incomingByte == 's') left3();

if(incomingByte == 't') left4();

if(incomingByte == 'u') left5();

if(incomingByte == 'v') left6();

if(incomingByte == 'w') left7();

if(incomingByte == 'x') left8();

if(incomingByte == 'i') right1();

if(incomingByte == 'j') right2();

if(incomingByte == 'k') right3();

if(incomingByte == 'l') right4();

if(incomingByte == 'm') right5();

if(incomingByte == 'n') right6();

if(incomingByte == 'o') right7();

if(incomingByte == 'p') right8();

}

}
```