#include <Adafruit\_TFTLCD.h>

#include <Adafruit\_GFX.h>

#include <TouchScreen.h>

#define LCD\_CS A3

#define LCD\_CD A2

#define LCD\_WR A1

#define LCD\_RD A0

#define LCD\_RESET A4

#define TS\_MINX 121

#define TS\_MINY 195

#define TS\_MAXX 948

#define TS\_MAXY 910

#define YP A2

#define XM A3

#define YM 8

#define XP 9

#define BLACK 0x0000

#define RED 0x001F

#define BLUE 0xF800

#define GREEN 0x07E0

#define CYAN 0x07FF

#define MAGENTA 0xF81F

#define YELLOW 0xFFE0

#define WHITE 0xFFFF

Adafruit\_TFTLCD tft(LCD\_CS, LCD\_CD, LCD\_WR, LCD\_RD, LCD\_RESET);

TouchScreen ts = TouchScreen(XP, YP, XM, YM, 300);

int puni=0, assistlevel=0;

boolean buttonEnabled = true;

void pedalassist()

{

int a=digitalRead(22);

delay(100);

int b=digitalRead(22);

delay(100);

if(a==b)

{

analogWrite (45,120);

}

else

{

analogWrite (45,assistlevel);

Serial.println(assistlevel);

}

TSPoint p = ts.getPoint();

if (p.z < ts.pressureThreshhold)

{

pedalassist();

}

}

void throttle()

{

int t=analogRead(A15);

t=constrain(t,170,865);

int s=map(t,170,865,80,250);

Serial.println(s);

analogWrite(45,s);

delay(200);

TSPoint p = ts.getPoint();

if (p.z < ts.pressureThreshhold)

{

throttle();

}

}

void setup()

{

pinMode(26, OUTPUT);

digitalWrite(26,HIGH);

pinMode(46,OUTPUT);

pinMode(22,INPUT);

pinMode(45,OUTPUT);

pinMode(44,OUTPUT);

pinMode(A11, INPUT);

Serial.begin(9600);

Serial.print("Starting...");

tft.reset();

tft.begin(0x9325);

tft.setRotation(1);

tft.fillScreen(WHITE);

tft.fillRect(0,00, 160, 60, GREEN);

tft.drawRect(0,00,160,60,BLACK);

tft.setCursor(05,05);

tft.setTextColor(BLACK);

tft.setTextSize(3);

tft.print("THROTTLE");

tft.fillRect(165,00,160, 60,GREEN);

tft.drawRect(165,00,160,60,BLACK);

tft.setCursor(170,05);

tft.setTextColor(BLACK);

tft.setTextSize(3);

tft.print("NORMAL ");

tft.fillRect(00,180, 100, 60, GREEN);

tft.drawRect(00,180,100,60,BLACK);

tft.setCursor(05,190);

tft.setTextColor(BLACK);

tft.setTextSize(3);

tft.print("PAS L");

tft.fillRect(105,180,110, 60, GREEN);

tft.drawRect(105,180,110,60,BLACK);

tft.setCursor(110,190);

tft.setTextColor(BLACK);

tft.setTextSize(3);

tft.print("PAS M");

tft.fillRect(220,180,130, 60, GREEN);

tft.drawRect(220,180,130,60,BLACK);

tft.setCursor(225,190);

tft.setTextColor(BLACK);

tft.setTextSize(3);

tft.print("PAS H");

}

void normal()

{

analogWrite(45,0);

}

void loop() {

TSPoint p = ts.getPoint(); //Get touch point

if (p.z > ts.pressureThreshhold) {

Serial.print("X = "); Serial.print(p.x);

Serial.print("\tY = "); Serial.print(p.y);

Serial.print("\n");

p.x = map(p.x, TS\_MAXX, TS\_MINX, 0, 320);

p.y = map(p.y, TS\_MAXY, TS\_MINY, 0, 240);

if(p.x>00 && p.x<160 && p.y>00 && p.y<40 && buttonEnabled)

{

buttonEnabled = false; //Disable button

pinMode(XM, OUTPUT);

pinMode(YP, OUTPUT);

Serial.println("Throttle");

tft.fillRect(0,00, 160, 60, RED);

tft.drawRect(0,00,160,60,BLACK);

tft.setCursor(05,05);

tft.setTextColor(BLACK);

tft.setTextSize(3);

tft.print("THROTTLE");

delay(1000);

tft.fillRect(0,00, 160, 60, GREEN);

tft.drawRect(0,00,160,60,BLACK);

tft.setCursor(05,05);

tft.setTextColor(BLACK);

tft.setTextSize(3);

tft.print("THROTTLE");

throttle();

buttonEnabled = true;

}

if(p.x>170 && p.x<350 && p.y>00 && p.y<40 && buttonEnabled)

{

buttonEnabled = false;

pinMode(XM, OUTPUT);

pinMode(YP, OUTPUT);

Serial.println("Normal");

normal();

buttonEnabled = true;

tft.fillRect(165,00,160, 60,RED);

tft.drawRect(165,00,160,60,BLACK);

tft.setCursor(170,05);

tft.setTextColor(BLACK);

tft.setTextSize(3);

tft.print("NORMAL ");

delay(1000);

tft.fillRect(165,00,160, 60,GREEN);

tft.drawRect(165,00,160,60,BLACK);

tft.setCursor(170,05);

tft.setTextColor(BLACK);

tft.setTextSize(3);

tft.print("NORMAL ");

}

if(p.x>00 && p.x<100 && p.y>180 && p.y<290 && buttonEnabled)

{

buttonEnabled = false;

pinMode(XM, OUTPUT);

pinMode(YP, OUTPUT);

Serial.println("PAS L");

assistlevel=180;

tft.fillRect(00,180, 100, 60, RED);

tft.drawRect(00,180,100,60,BLACK);

tft.setCursor(05,190);

tft.setTextColor(BLACK);

tft.setTextSize(3);

tft.print("PAS L");

delay(1000);

tft.fillRect(00,180, 100, 60, GREEN);

tft.drawRect(00,180,100,60,BLACK);

tft.setCursor(05,190);

tft.setTextColor(BLACK);

tft.setTextSize(3);

tft.print("PAS L");

pedalassist();

buttonEnabled = true;

}

if(p.x>105 && p.x<205 && p.y>180 && p.y<290 && buttonEnabled)

{

buttonEnabled = false;

pinMode(XM, OUTPUT);

pinMode(YP, OUTPUT);

Serial.println("PAS M");

assistlevel=200;

tft.fillRect(105,180,110, 60, RED);

tft.drawRect(105,180,110,60,BLACK);

tft.setCursor(110,190);

tft.setTextColor(BLACK);

tft.setTextSize(3);

tft.print("PAS M");

delay(1000);

tft.fillRect(105,180,110, 60, GREEN);

tft.drawRect(105,180,110,60,BLACK);

tft.setCursor(110,190);

tft.setTextColor(BLACK);

tft.setTextSize(3);

tft.print("PAS M");

pedalassist();

buttonEnabled = true;

}if(p.x>210 && p.x<320 && p.y>180 && p.y<290 && buttonEnabled)

{

buttonEnabled = false;

pinMode(XM, OUTPUT);

pinMode(YP, OUTPUT);

Serial.println("PAS H");

assistlevel=240;

tft.fillRect(220,180,130, 60, RED);

tft.drawRect(220,180,130,60,BLACK);

tft.setCursor(225,190);

tft.setTextColor(BLACK);

tft.setTextSize(3);

tft.print("PAS H");

delay(1000);

tft.fillRect(220,180,130, 60, GREEN);

tft.drawRect(220,180,130,60,BLACK);

tft.setCursor(225,190);

tft.setTextColor(BLACK);

tft.setTextSize(3);

tft.print("PAS H");

pedalassist();

buttonEnabled = true;

}}

}