//LCD 16x2 i2c Module- 4 wires only.

//sketch created by Akshay Joseph.

//Modified by Pat McMahon 27/3/2022 with explanations and 30 lines of messages.

//Connect from the 16x2 i2c LCD Module to the Arduino Uno.

//GND from the 16x2 to GND on Uno

//Vcc from the 16x2to 5V on Uno

//SDA from the 16x2to A4 on Uno

//SCL from the 16x2to A5 on Uno

//Backlight seems to be on whether the small jumper switch is on or off.

//Adjust the trimpot on the 16x2 to get the desired display.

//The Sketch below makes the display lines on the LCD alternate from top to bottom etc.

#include <Wire.h> // These Libraries are required.

#include <LiquidCrystal\_I2C.h> // These Libraries are required.

LiquidCrystal\_I2C lcd(0x27, 16, 2); // ox27 is the code for the particular 16x2 module, 16 and 2 is for the 16 across,2 down.

int timer=2000; //Sets the interval between the line delays. Alter to fasten or slow the change.

void setup()

 // This setup does the following once.

{

 lcd.init(); // This initializes the LCD.

 lcd.backlight(); // This turns on the backlight of the LCD.

 lcd.clear(); //This wipes the screen.

 lcd.setCursor(0,0); //Sets the screen to start on the top left, top line of screen.

}

void loop() //This loops the code when the Uno is powered up.

{

 lcd.setCursor(0,0); //Starts the character on top left, top line of screen.

 lcd.print("This is Pats "); //Prints the first line of the message.

 delay (timer); //Delays the change to the next line which is 1500 milliseconds.

 lcd.clear(); //Wipes the first line message.

 lcd.setCursor(0,1); //Starts the character on bottom left, bottom line of screen.

 lcd.print("Arduino"); //Prints the second line of the message.

 delay (timer); //Delays the change to the next line which is 1500 milliseconds.

 lcd.clear(); //Wipes the second line message.

 lcd.setCursor(0,0); //Repeats the steps above to continue other lines as above.

 lcd.print("Sketch Code");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,1);

 lcd.print("for a 4wire,16x2");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,0);

 lcd.print("LCD module,using ");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,1);

 lcd.print("an Arduino Uno. ");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,0);

 lcd.print("The connections ");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,1);

 lcd.print("are as follows- ");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,0);

 lcd.print("for the i2c 16x2");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,1);

 lcd.print("4wire LCD Module");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,0);

 lcd.print("GND - GND on Uno ");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,1);

 lcd.print("VCC - 5V on Uno ");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,0);

 lcd.print("SDA - A4 on Uno");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,1);

 lcd.print("SCL - A5 on Uno");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,0);

 lcd.print("Any code written ");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,1);

 lcd.print("must be no more ");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,0);

 lcd.print("than 16 ");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,1);

 lcd.print("characters ");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,0);

 lcd.print("long");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,1);

 lcd.print("between the ");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,0);

 lcd.print("Exclamation n ");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,1);

 lcd.print("Quotes ");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,0);

 lcd.print("otherwise ");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,1);

 lcd.print("it will run into ");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,0);

 lcd.print("the next line.");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,1);

 lcd.print("An easy way to");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,0);

 lcd.print("use only 4 wires");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,1);

 lcd.print("to be able to ");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,0);

 lcd.print("display lots");

 delay (timer);

 lcd.clear();

 lcd.setCursor(0,1);

 lcd.print("of messages.");

 delay (timer);

 lcd.clear();

 delay (5000);

}