Home Project #3

Introduction to RB PICO

Victor Mendoza

ID: 6348908

EML480 Introduction to Mechatronics

Date of Submission: 28-09-2025

Fall, 2025

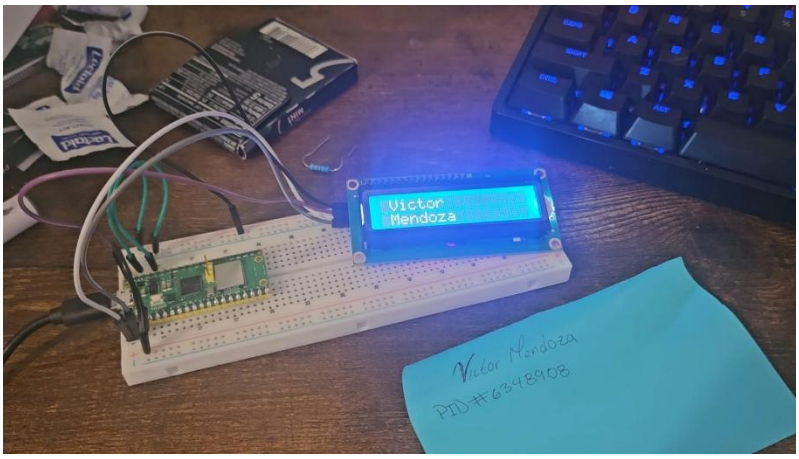
Introduction:

This project focuses on interfacing a Raspberry Pi Pico with an LCD screen to display custom messages. Using a breadboard, wires, and an adjustable contrast setting, the LCD was programmed to show the first and last name of the user across two rows. The activity demonstrates how to send text-based information from a microcontroller to a human-readable display while reinforcing circuit setup and debugging practices.

Materials used:

1. Pico Board
2. LCD Screen
3. Hook-up wires
4. Breadboard
5. Wires

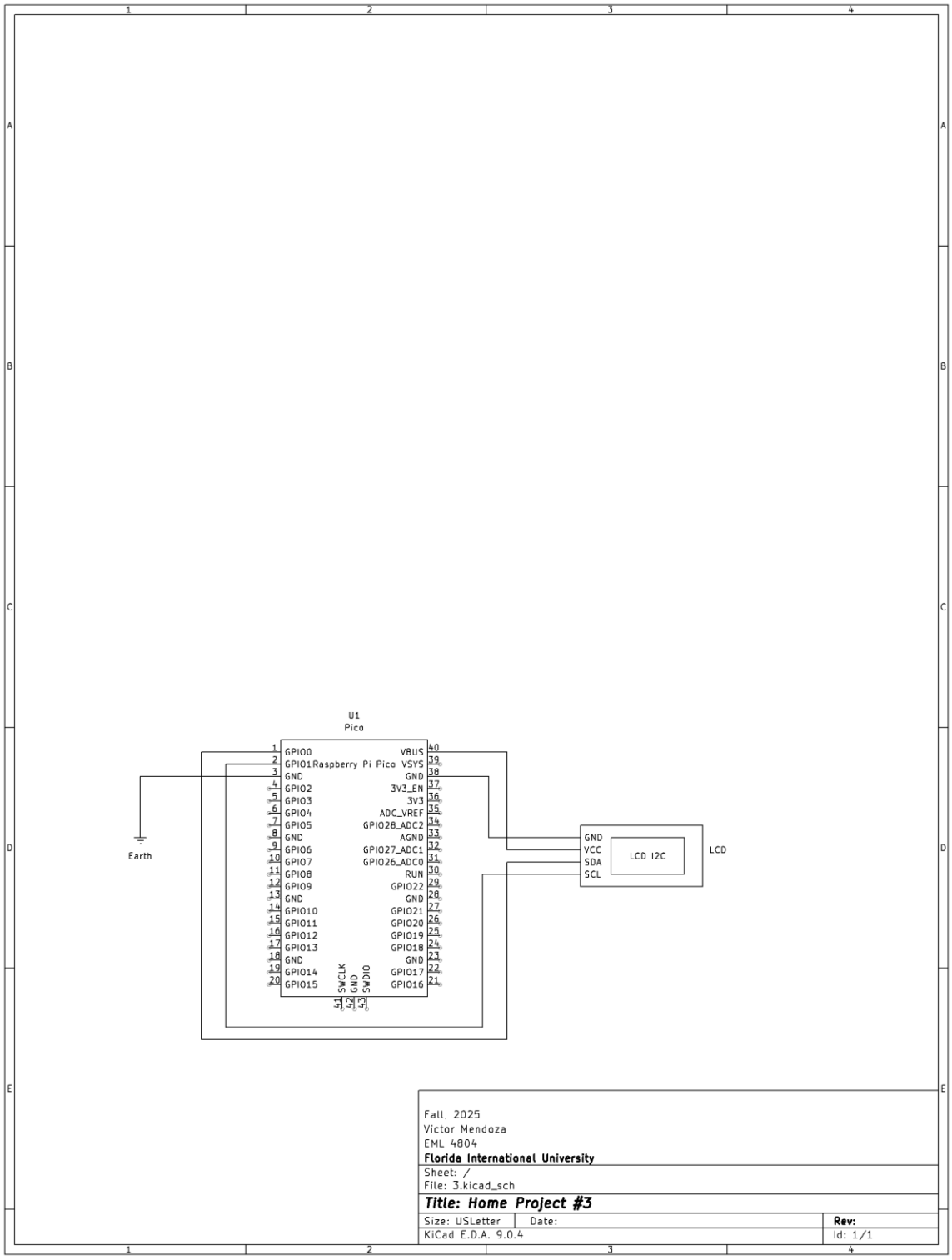
Picture:



Video link:

https://youtu.be/3ZLvywtOJ0I

Diagram:


U1
Pico
Raspberry Pi Pico
GPIO0
GPIO1
GND
GPIO2
GPIO3
GPIO4
GPIO5
GND
GPIO6
GPIO7
GPIO8
GPIO9
GND
GPIO10
GPIO11
GPIO12
GPIO13
GND
GPIO14
GPIO15
SWCLK
GND
SWDIO
VBUS
VSYS
GND
3V3_EN
3V3
ADC_VREF
GPIO28_ADC2
AGND
GPIO27_ADC1
GPIO26_ADC0
RUN
GPIO22
GND
GPIO21
GPIO20
GPIO19
GPIO18
GND
GPIO17
GPIO16
Earth
GND
VCC
SDA
SCL
LCD I2C
LCD
Fall, 2025
Victor Mendoza
EML 4804
Florida International University
Sheet: /
File: 3.kicad_sch
Title: Home Project #3
Size: USLetter
Date:
Rev:
KiCad E.D.A. 9.0.4
Id: 1/1

Code:

```
from lcd1602 import LCD
import utime

lcd = LCD()
lcd.clear()
utime.sleep(2)
string = " Victor\n"
lcd.message(string)
utime.sleep(2)
string = " Mendoza"
lcd.message(string)
utime.sleep(10)
lcd.clear()
```

Conclusions:

The circuit and code were successfully implemented to display the user's first name on the top row of the LCD and the last name on the bottom row. The LCD output matched the expected result, confirming correct wiring and program execution.

References:

- Raspberri Pi Pico Library: https://github.com/ncarandini/KiCad-RP-Pico/tree/main
- How to use a breadboard https://learn.sparkfun.com/tutorials/how-to-use-a-breadboard/all
- Raspberry Pi Pico usage https://www.raspberrypi.com/documentation/microcontrollers/pico-series.html
- LCD wiring instructions https://docs.sunfounder.com/projects/thales-kit/en/latest/micropython/liquid_crystal_display.html