

RP2040 MACROPAD

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1 Introduction & Objective

The RP2040 Macropad is a raspberry pi microcontroller connected to twelve key pinouts, a small LED screen and one rotary encoder. In this project, we explore software made using the Arduino IDE and C++ code.

2 Theory

3 Abstract

4 Purpose

The purpose of this project is to create software for the RP2040 Macropad.

5 Hypothesis

If I write specific code for the RP2040 Macropad then xyz will happen because of the software created.

6 Variables

Control Dependent Independent

7 Materials

- Full kit with all parts found here: <https://www.adafruit.com/product/5128> or alternatively:
 - – 3x4 Keys
 - Encoder
 - OLED display
 - 12 Mechanical Key Switches
 - 12 Keycaps
 - Adafruit MacroPad bottom plate
 - 3x4 Mechanical keyboard plate
 - D-Shaft Skirted Rubber Knob
 - 4 M3 5mm Machine screw
 - 4 Rubber Feet
- MacOS computer/laptop
- USB cord

8 Procedure

1. Download the latest version of the Arduino IDE.
2. Add the Philhower Board Manager URL to download additional boards including the RP2040 Macropad.
3. In the Arduino IDE, go to Tools → Board → Boards Manager to select the RP2040 Macropad.
4. In the Sketch Tab, go to Port and select the corresponding port.
5. Now, the IDE is all set for code to be written in and run directly on the board.
6. The board itself can be reset by pressing the reset button on the edge.
7. To enter the bootloader, hold don on the rotary encoder and while continuing to hold it, press and release the reset button. Continue holding the rotary encoder until the RPI-RP2 drive appears on your computer.
8. Now, you are all set to write code for the RP2040 Macropad.

9 Experiment

10 Results & Analysis

11 Conclusion & Application

12 References

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