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Overview

The Arduboy is an adorable & super thin gaming board that features an Arduino-compatible ATmega32u4, 128x64 monochrome OLED screen, buzzer, and 6 buttons. It's an amazing platform for writing small games, within the limits of the 8-bit microcontroller it uses!

Arduboy
What do you get when you cross Arduino with a Game Boy? Arduboy! The game system the size of a credit card! Create your own games, learn to program or... https://www.adafruit.com/product/3264

Since Arcada boards, like the PyGamer and PyBadge's are also Arduino compatible, its easy to compile any Arduboy games for these boards. The PyGamer/PyBadge have much faster processors with more memory and a larger screen, but we will not be 'emulating' the Arduboy games - we really will just re-compile them.

Since it has a higher resolution screen, we'll mimic the OLED by having the 128x64 display in the center of the TFT with white LEDs on black. The buttons work the same, and the buzzer will be replicated by the built-in buzzer or speaker/headphones. For the EEPROM emulation, we create a 1KB file on the Flash storage built into Arcada boards. And that's it!
What can I use?

We use the Arcada Arduino library to interface with the hardware, and can run on:

- Adafruit PyGamer for MakeCode Arcade
- CircuitPython or Arduino

What fits in your pocket, is fully Open Source, and can run CircuitPython, MakeCode Arcade or Arduino games you write yourself? That's right, it's the Adafruit...

https://www.adafruit.com/product/4242
Adafruit PyBadge for MakeCode Arcade, CircuitPython, or Arduino
What's the size of a credit card and can run CircuitPython, MakeCode Arcade or Arduino? That's right, it's the Adafruit PyBadge! We wanted to see how much we...
https://www.adafruit.com/product/4200

Adafruit PyBadge LC - MakeCode Arcade, CircuitPython, or Arduino
What's the size of a credit card and can run CircuitPython, MakeCode Arcade or Arduino even when you're on a budget? That's right, it's the Adafruit...
https://www.adafruit.com/product/3939

USB A/Micro Cable - 2m
This is your standard USB A-Plug to Micro-USB cable. It's 2 meters long so you'll have plenty of cord to work with for those longer extensions.
https://www.adafruit.com/product/2185
Arduboy Libraries

Step 1. Install Arduino IDE, drivers & board package

Before you start, you'll need to follow the guide for your particular board to install the Arduino IDE, drivers and board support package so that you can upload code to it via Arduino.

Step 2. Install Arcada Libraries

We use quite a number of libraries to access the display, sound, buttons, etc.

Visit the Arcada library page to install all the libraries listed (yes that's a dozen!) (https://adafru.it/EUk)

Step 3. Install Adafruit Version Arduboy Libraries

In addition to the Arcada libraries, you'll need the Adafruit-tweaked versions of all the Arduboy libraries. We will install these manually, not through the library manager, so download the Zips and then select Add .ZIP Library... to install each one.

These replace the existing libraries but add support for Arcada boards, for that reason, you should remove any existing libraries you have with these names!

Arduboy2 Library for Arcada Boards

https://adafru.it/EUh
ArduboyTones Library for Arcada Boards
https://adafru.it/EUi

Arduboy Playtune Library for Arcada Boards
https://adafru.it/IpE

Arduboy Test

OK, let's test out that this worked. Restart the Arduino IDE and select the board you'll be uploading to, then open the Arcada Arduboy2 examples. Start with HelloWorld
Once you’ve got that working, and Hello World appears on the screen, move onto Buttons demo, try moving the text around with the D-Pad/joystick and A+B buttons.

Finally - load up the Breakout demo to play a real game!

Some Examples

There's over 100 games available, and we don't want to play any favorites! We did try a couple games that are good demonstrations of the Arduboy platform. Here are
ready-to-go UF2s you can drag-n-drop onto the BOOT bootloaders of a PyGamer or PyBadge

**CastleBoy**

This Castlevania inspired 'de-make' has a whip-wielding protagonist, and floating skulls of doom!

![CastleBoy Logo]

**CastleBoy_PyGamer.UF2**
https://adafruit.it/EUl

**CastleBoy_PyBadge.UF2**
https://adafruit.it/EUm