Arcade Coin-Op
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https://learn.adafruit.com/arcade-coin-op

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# Table of Contents

**Overview**  
3

**Train the Coin Acceptor**  
4
  - Hook It Up
  - Coin to Credit

**Build the Coin Case**  
10
  - Assembly
  - Front Panel
  - Back Panel
  - Bottom and Sides
  - Power it Up
Insert Quarter. What a wonderful phrase, that speaks of unlimited possibility! Today, we usually just press a button on our emulators when we see those words, but how much more fun to actually drop a coin into the slot to add credits!

This project will show you how to do just that. By connecting a programmable coin acceptor to the Picade controller, you can close the contacts on your coin credit pins that would normally be driven by a button.

You could build a simple version using the Programmable 1 Coin Type acceptor, maybe to use with one type of token or coin, but here we'll use the fancy Programmable 4 Coin Type acceptor and give players two credits for a 50 cent piece, and four credits for a Sacajawea or Susan B. Anthony!
Train the Coin Acceptor

The coin acceptor is pretty impressive -- it can distinguish between different coins, can throw a built-in solenoid to allow good coins to drop and send bad ones to the return slot. It also can send pulsed signals to your microcontroller to indicate which coins it's accepted.

The first thing to do is prepare the coin acceptor to accept the coins you want to use. It uses a few sensors to distinguish different coins and the on-board microcontroller needs to learn which ones are good.

Follow the steps on the included manual for your coin acceptor -- the four coin model's instructions are shown here.
To begin, we need to provide 12V DC power. Connect the red and black wires from the coin acceptor's wiring harness to the female DC power jack's screw terminals, + and - respectively.

Plug the harness into the coin acceptor. Then plug in the power plug from your wall adapter, which should be plugged into an AC outlet. You'll hear a loud beep, and the red LED on top will light up.
Follow the steps in the instructions. When you get to step 4. of the parameter setup section, you will tell the coin acceptor how many pulses to send for each type of coin your program. You could, for example, send one pulse for a quarter, two for a 50 cent piece, and four for a dollar coin. Each pulse will be a game credit.

Pick a value of 1 pulse for your smallest value coin that equals one credit. In the example below, I chose a quarter as the smallest coin, which will pulse once for one credit.

Here's a GIF of the process:
Now, repeat the process for your second coin, say a 50 cent piece, but this time, when you get to step 4., choose a pulse value of two.

You can test it out once you're finished programming it by dropping in coins and watching the readout on the side.

**Hook It Up**

To use the coin box instead of a button to add in-game credits, insert the white wire from the coin box wiring harness to the Picade's 1/4 (get it, Quarter?) pin, and the black wire to the Picade GND.

First, add a length of black wire to the same ground terminal on the DC power jack that we used to connect the coin's black wire for power. This will be used for the common ground with the Picade board.
white wire to 1/4

black wire to GND
Coin to Credit

It may be helpful to remove the control panel from the front of the cabinet in order to access the button pins. Unscrew the two retaining screws and lift it off.

The default coin button is the left one on the front panel. For simple operation, (where you can always still use the button when you run out of quarters) connect the coin box's white and black wires to the two terminals of this button using alligator clip leads.

If you don't want any loopholes for players without quarters, you can wire the coin box's black output wire to ground and the white wire to the quarter pin on the Picade board and disconnect the front left button. You could wire up a switch inside the cabinet to toggle this on and off as well.

Be aware, you will need to adjust key bindings to reclaim the "select" key functions that are shared with the "coin" button using the RetroPie configuration tools.
Build the Coin Case

You can use anything from a cardboard box to a steel enclosure to house your coin acceptor. Since we aren't leaving this out for crazed players at the local arcade, we don't need to worry about security, so a more moderate enclosure will do. We want the case to keep things neat, allow coins to be collected and match the looks of our Picade cabinet.

This design was made to be laser cut from acrylic, and is fastened with sixteen M2.5 x 16mm socket head screws and nuts. The coin acceptor mounts with the four included bolts and nuts, or your own M4 screws and nuts.

You can also print the vector files and use them as a template to cut out the material of your choice -- anything from foamcore board or cardboard with a hobby knife, to baltic birch plywood on a bandsaw.

Download the vector file linked here.

picadeCoinBox.svg
Either cut the vector paths on a laser cutter from 3mm (1/8") acrylic, or print the file and use it as a stencil to cut your parts with another tool.
Assembly

Front Panel
First, mount the coin acceptor to the front face as shown here.
Also, insert four of the M2.5 screws into the front panel, and thread on their nuts a few turns.
Back Panel

Feed the wiring harness connector through the back panel's circular opening.
Plug it into the coin acceptor.
Add four M2.5 screws and nuts to the back panel as shown, and then fasten it and the front panel to one of the side panels.

The panels are connected by sliding one of the nuts into the t-slot and then tightening the screw to pull the panels toward each other. Careful not to tighten too hard!
Bottom and Sides
Using the same method, fasten the bottom
Add the second side panel
Finish by fastening on the top panel!

Power it Up

You can now plug in your 12V DC wall adapter to the wall and to the female jack connected to the wiring harness. The coin acceptor will beep upon startup.

You can now position the coin box as you like, and open up your arcade for play!