

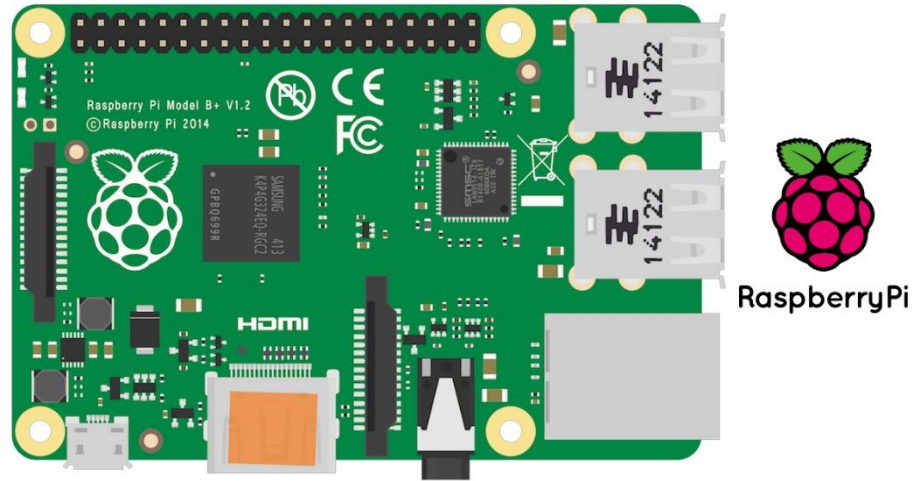
Assessment 2

ADAD3402 Interactive Generative Visualisations

■ z5158177

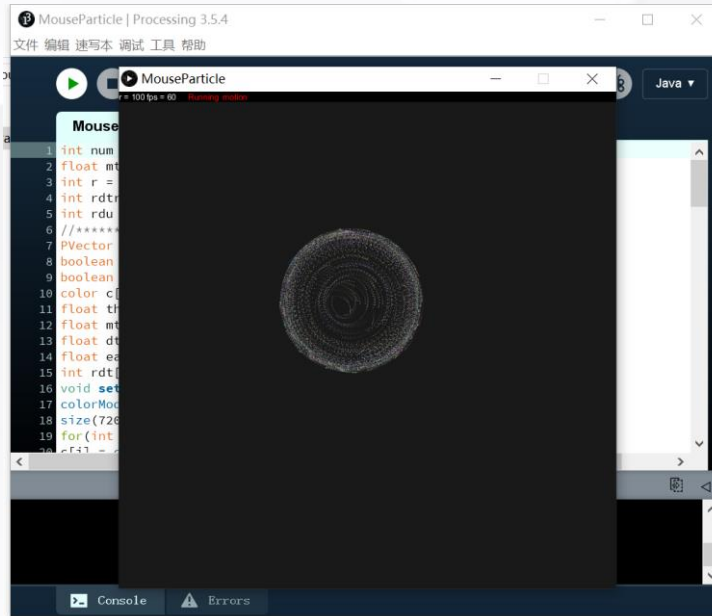
■ Yicheng PAN

The Concept

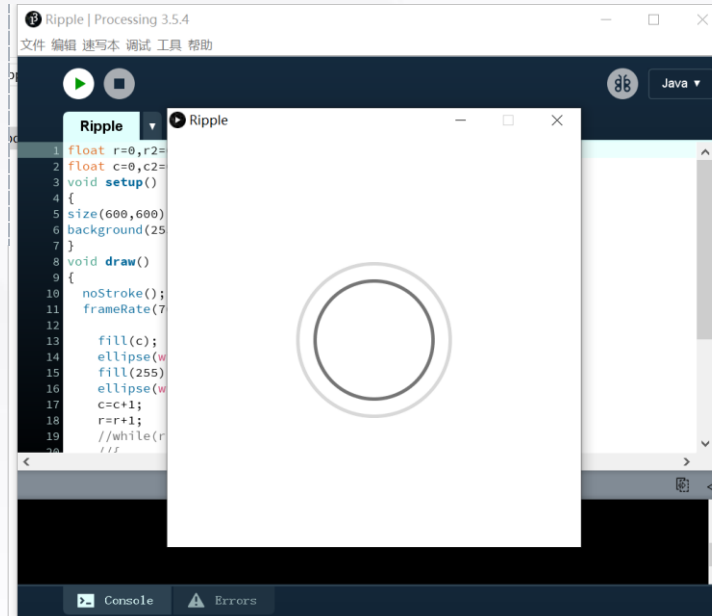


Use the raspberry pie and camera to simulate the effect of the mirror on the screen and increase the interactivity, so that the viewer can get feedback on the graphics and sound effects while touching the mirror.

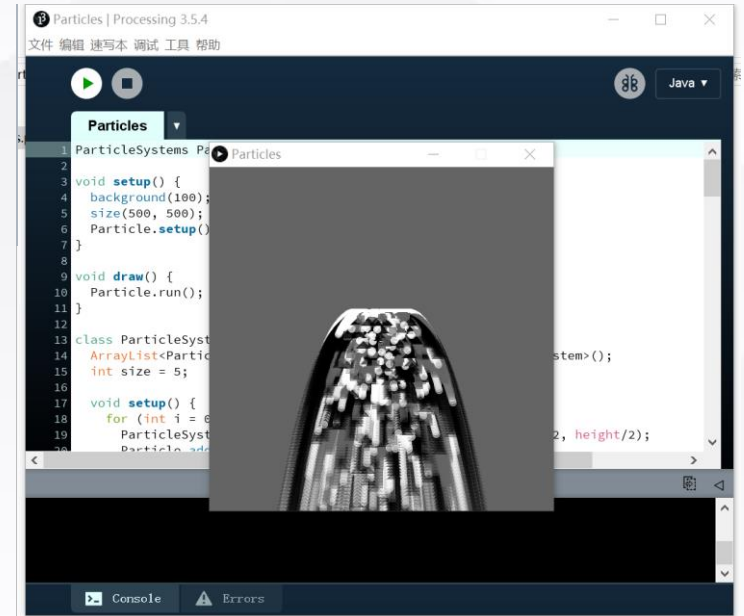
Interaction principle



The particle dynamic effect will automatically play in a loop without physical touch

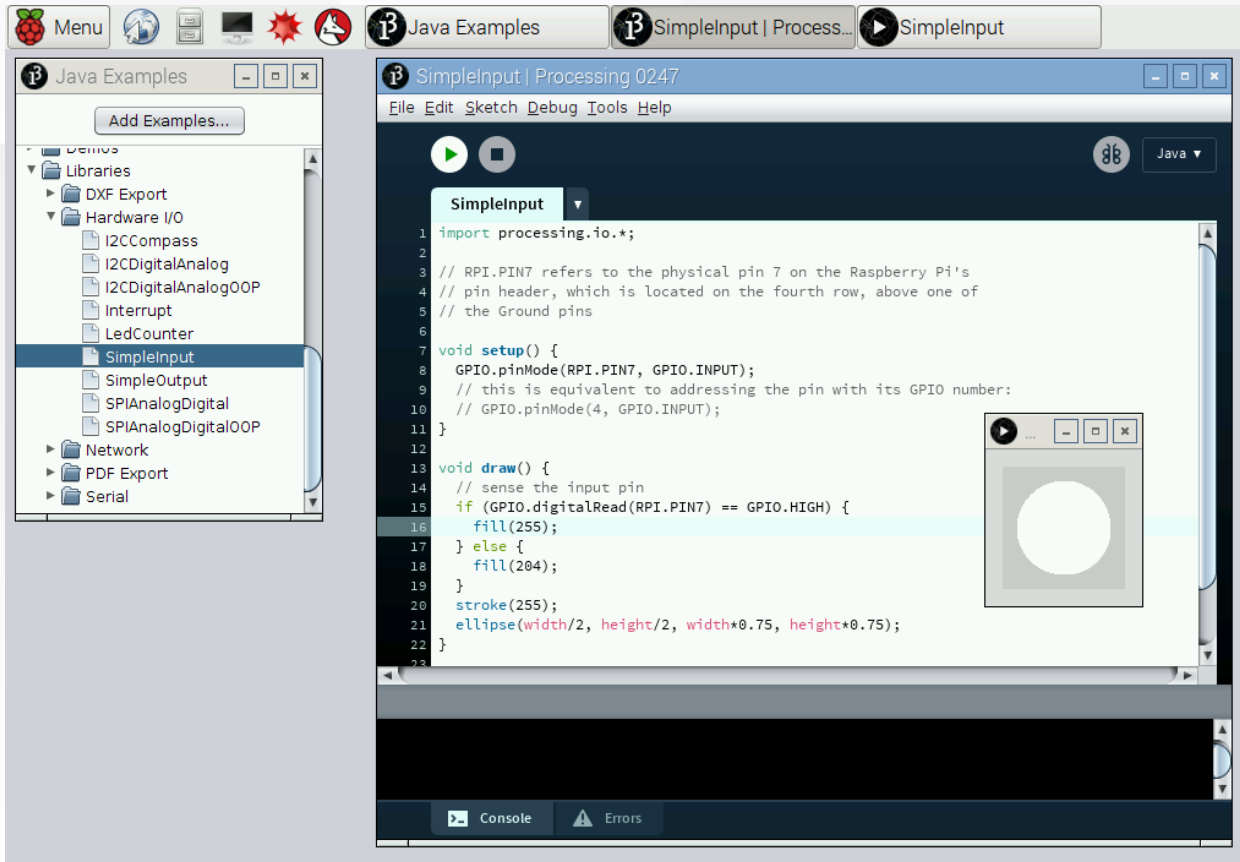


After sensing the touch operation, the screen will fade out to the mirror mode



More interactive effects can be reflected in different touch schemes

Interaction principle



The best solution to use Processing 3 on the Raspberry Pi is to directly flash the Raspberry Pi system that has embedded the complete Processing 3 program, which can be found on the official website, but the installation is a bit troublesome.

Prerequisites

To run Processing on a Raspberry Pi computer, you will want to have:

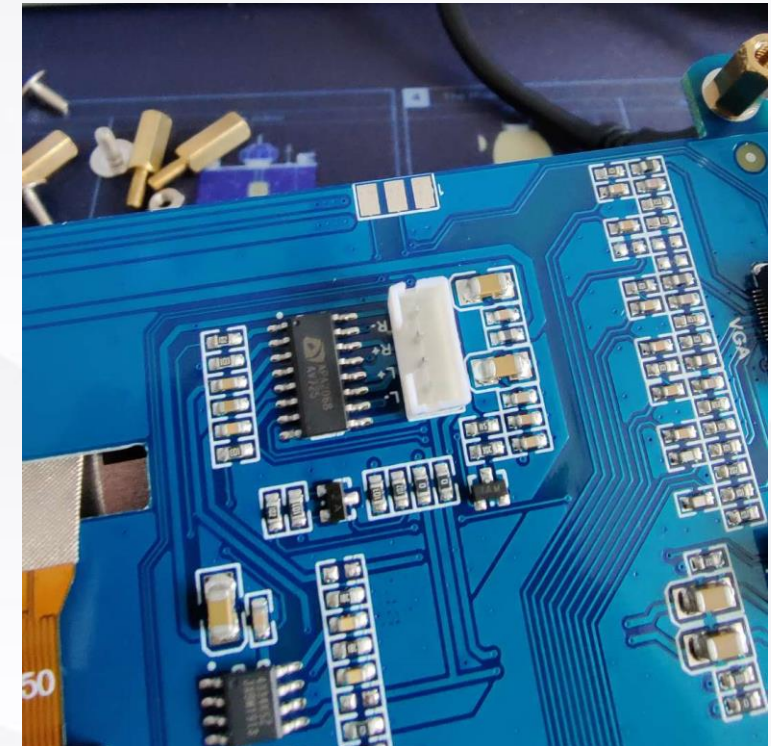
- a Raspberry Pi model 3+, 3 or 2 (those are recommended, it *will* work the Pi Zero and older versions, albeit much more slowly)
- an unused microSD card, at least 8 GB in size (fast cards are a plus)
- a suitable USB power supply (2.5A are recommended for the latest model)
- an HDMI cable to hook up the Pi to a screen
- a USB keyboard and mouse

Interaction Scenario

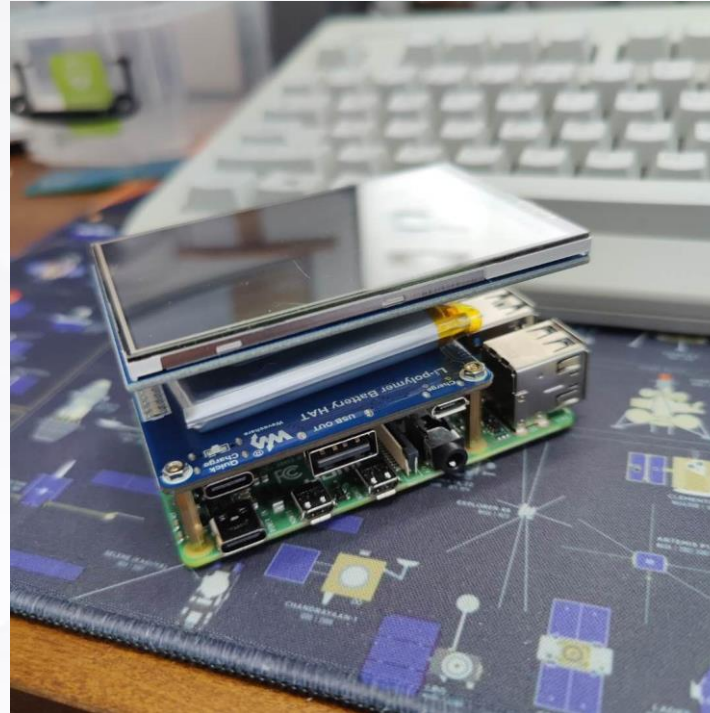


The camera uses a cable to directly connect to the motherboard, but you need to load the driver yourself into the Processing 3 program folder and debug it.

The speaker interface is a specific 4-pin interface, which is rare in the market, so it has not been received yet.

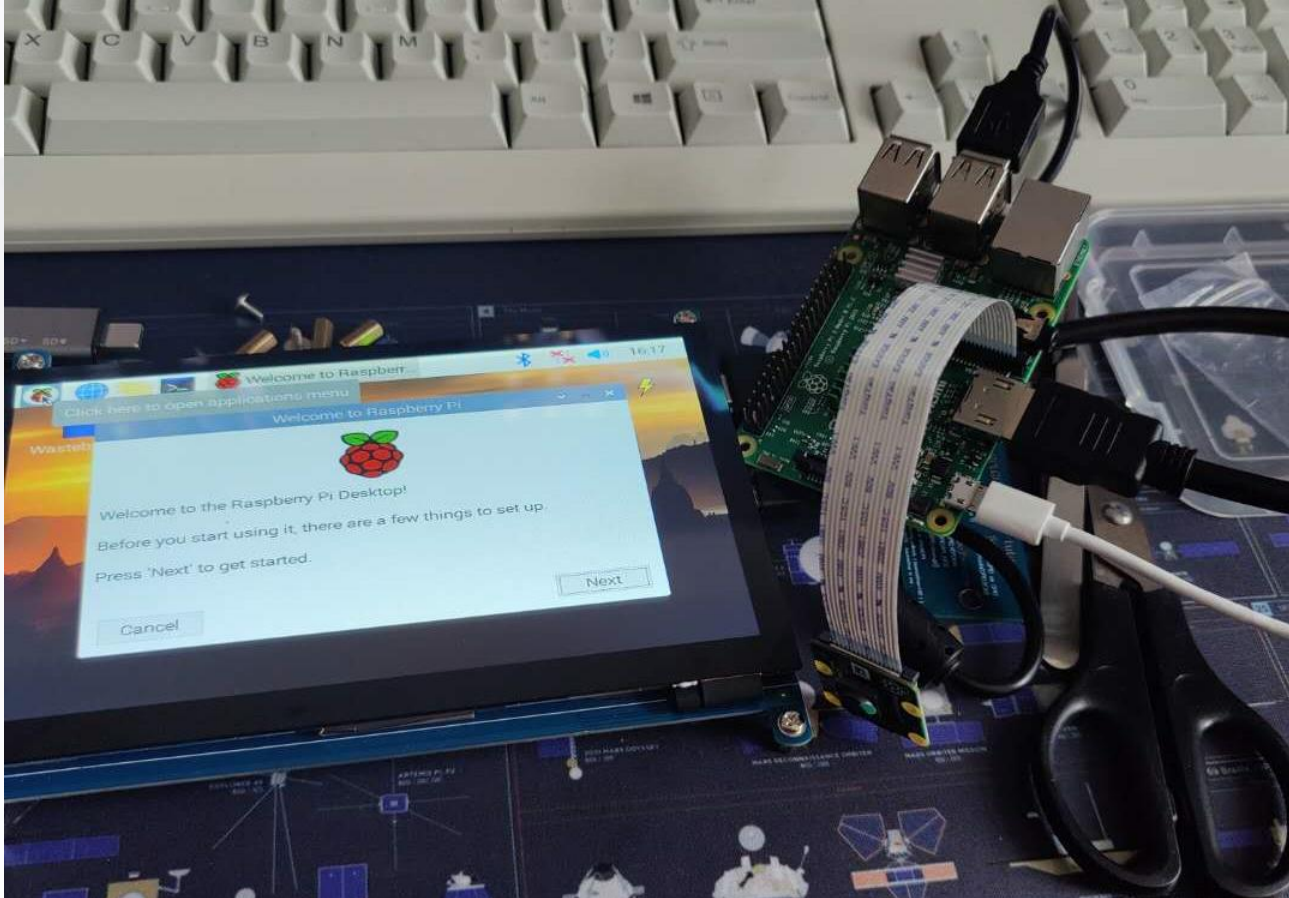


Interaction Scenario



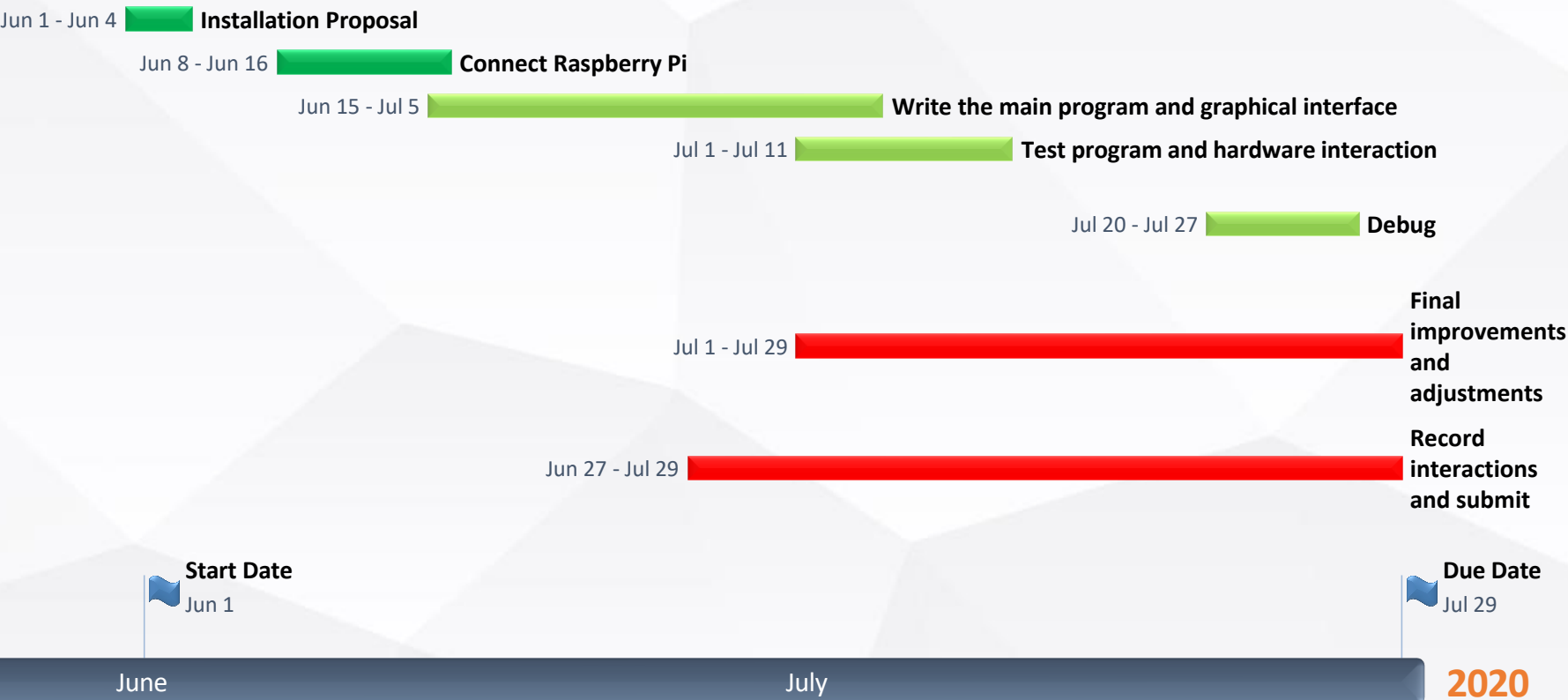
Compared two different motherboard and battery solutions. Raspberry Pi 4B has excellent performance but overflows and consumes a lot of power, which will burden the screen and camera and accelerate power consumption. Raspberry Pi 3B is efficient and power-saving, has better adaptability to the camera and touch driver, and has a variety of power supply solutions.

Interaction Scenario



For system adaptation, more debugging is needed, and the resolution of the connected screen needs more debugging to achieve compatibility with the program. The camera and motherboard need to be fixed behind the screen. For aesthetics, the periphery of the screen and the motherboard can be surrounded and covered and made into a whole to ensure that the interface is exposed. Pressed wood boards that are easy to cut and sand become the primary material. The wire used for the connection should also be taken into consideration.

Production Timeline



THANKS

■ z5158177

■ Yicheng PAN