

Report on the individual programming assignment of the sensor-included android app

SM3607 Mobile Media

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Motivation

The concept of the app came up with a daily life experience. I found the way of waitress holding and balancing multi dishes on a single-arm interesting, which inspired me to create an app providing a similar experience to users.

To explore this idea more, the concept of hotpot is also added.

Therefore, instead of avoiding the foods dropping out of the plate, I change it into a situation where the users are required to drop a certain amount of foods into the hotpot in a limited time to cook.

So, the accelerometer is decided to use to control the rotation angle of the plate, changing the movement of foods.

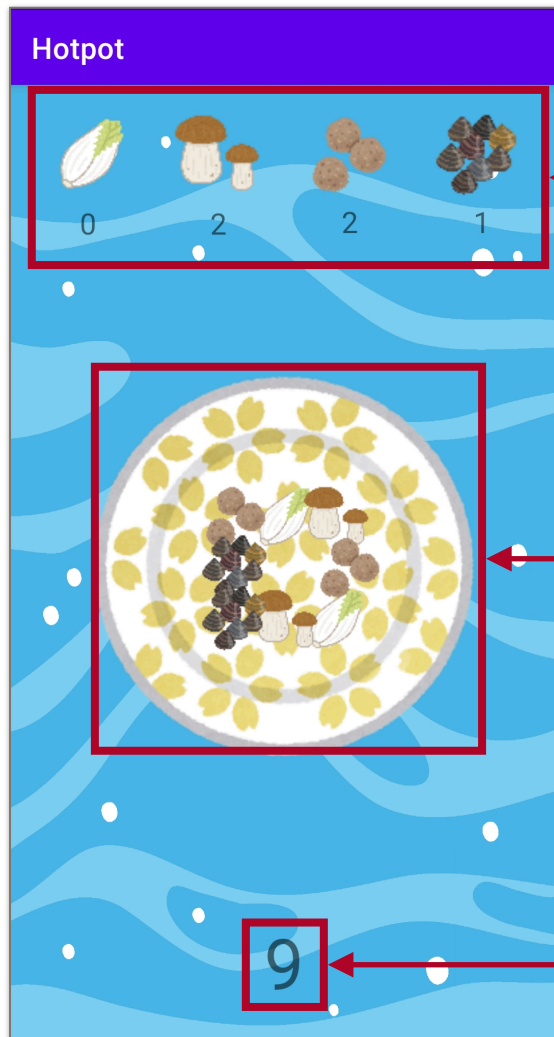
How-to-Use

Home Screen



Press the start button to enter the game screen

Game Screen

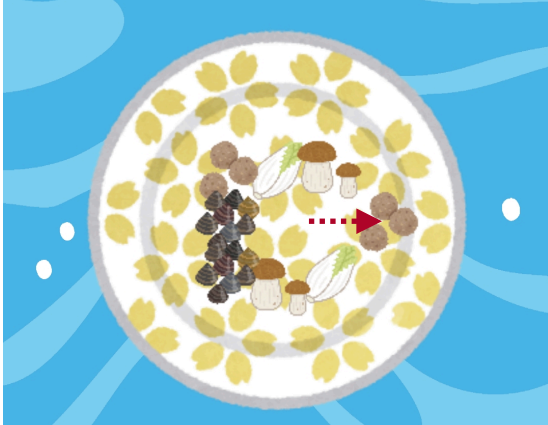


It is the food counters displaying the required amounts of foods needed to be dropped out from the plate to be cooked. For example, in this case, 2 mushrooms, 2 meatballs and 1 clam are needed to be thrown into the water

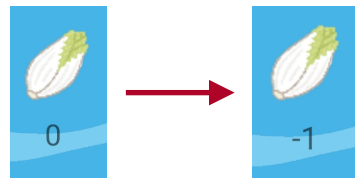
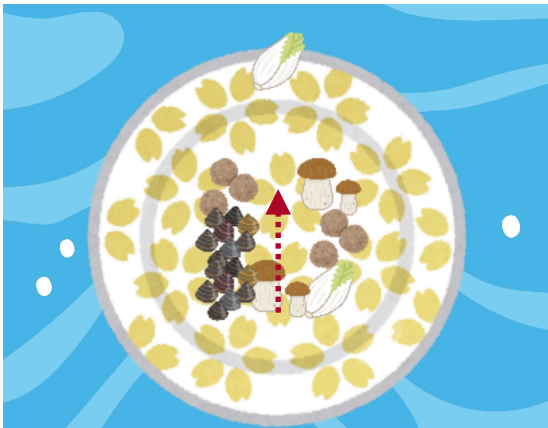
It shows the real-time position of all the foods on the plate. If the users rotate their phone along the x, y-axis, the foods will move. If the foods are completely out of the plate, they will disappear and be judged as "drop into the water".

It shows the time limit in one game. If the value of the time counter shown is zero, users not throwing the required amount of foods into water will lose the game.

Game Control

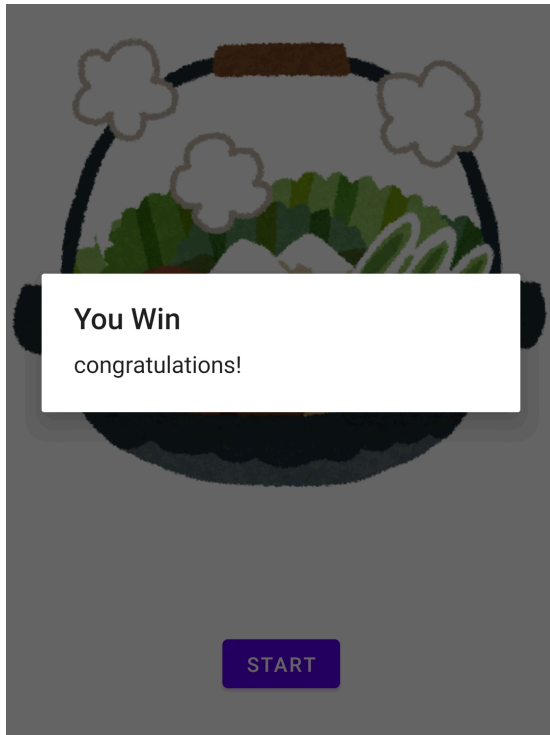


If the users only rotate the phone along the y axis to the right. The meatball on the right [x,0] can obtain the highest velocity relative to other food.



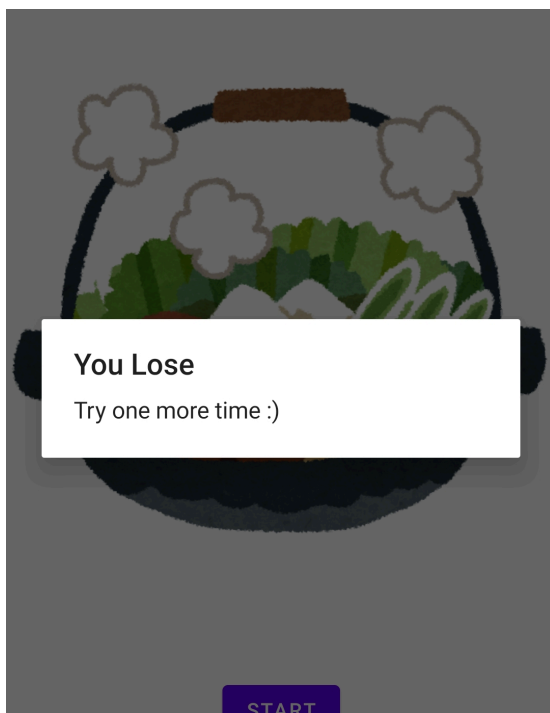
Every time a food is judged as “drop into the water”, the value of the corresponded food counter on the top decreases by one. If the value is decreased to -1, the users will lose the game.

Winning & Losing



Winning Condition:

All the value of food counters are dropped to zero before reaching the time limit, meaning that all the required foods are dropped into the hotpot



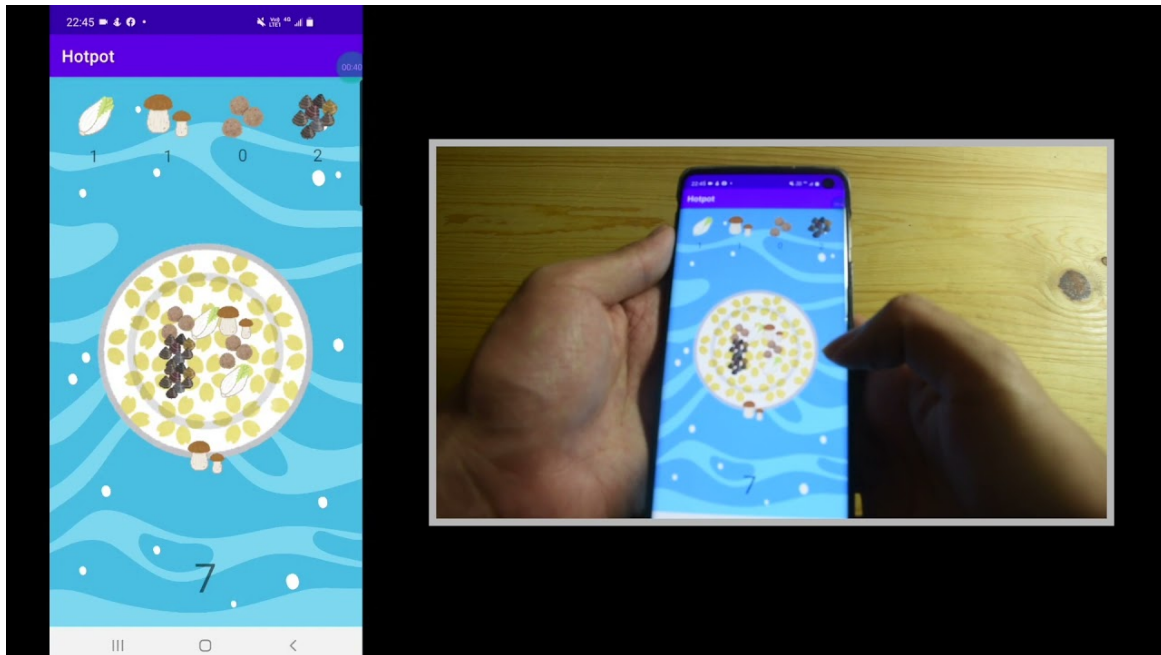
Losing Condition:

The value of a food counter is dropped to -1

Any value of food counters is not zero once the game reaches its time limit

Demo Video Link

YouTube:



Reference

Code

T7_TiltingTest

Image

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