

# Game Design Document

## 1. Basic Game Information

Name: Paper Boat

Game Genre: Somatosensory, Puzzle Solving

Operating platform: PC + Leap Motion (Somatosensory peripherals)

Player Age Range: 6+

## 2. Game Overview

**Design Inspiration:** I thought of the experience of playing with paper boats when I was a child. I would put a folded paper boat in water and then fiddle with water surface to make boat move. So I had a whim, what would it be like if this kind of playing process could be incorporated into game?

2D/3D: 3D

**Game Perspective:** Third person following perspective

**Game Content Overview:** Paper Boat is a somatosensory game based on Leap Motion equipment. It's a single-player puzzle clearing game.

In this game, players need to control the boat in game to move forward through somatosensory interaction, so that the boat can finally reach the blue crystal.

During the period, the boat will encounter various obstacles and mechanisms, and players need to interact with these mechanisms to eliminate obstacles.

Game Clearance Conditions: boat arrives at blue crystal

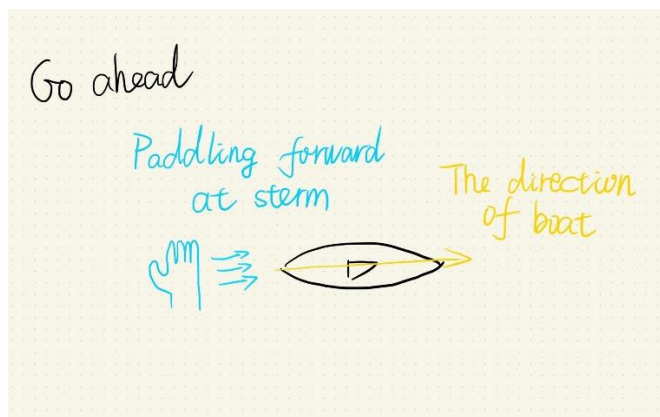
### 3. Game Control Method

#### Boat

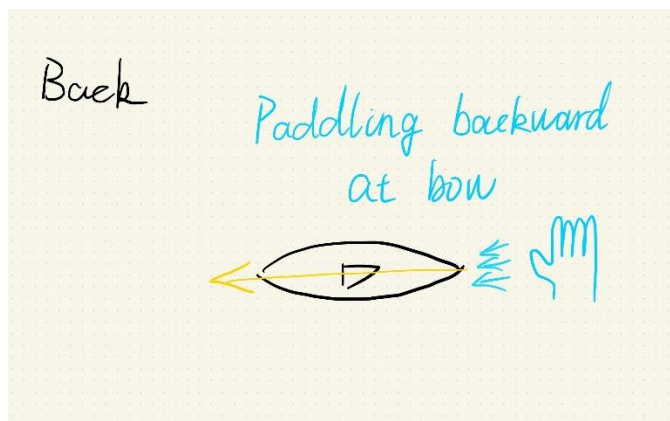
In this game, player does not directly control boat, but interacts with objects in game by manipulating virtual hands generated by somatosensory device in game. When player manipulates the virtual hand to row water around boat, boat will move.

When boat moves, camera and virtual hands will automatically follow the boat.

Go ahead -- [Paddling forward at stern](#)

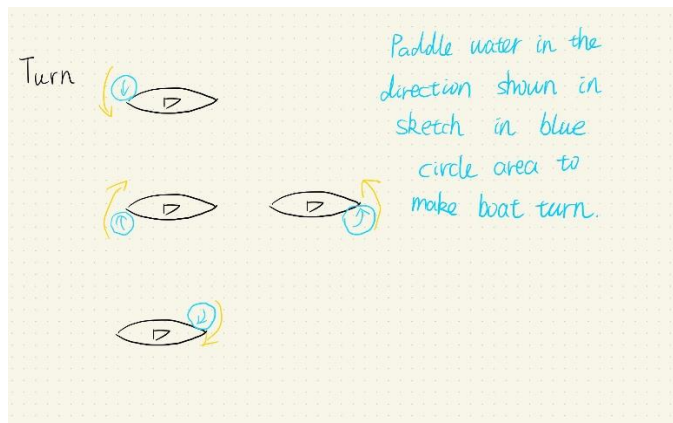


Back – [Paddling backward at bow](#)

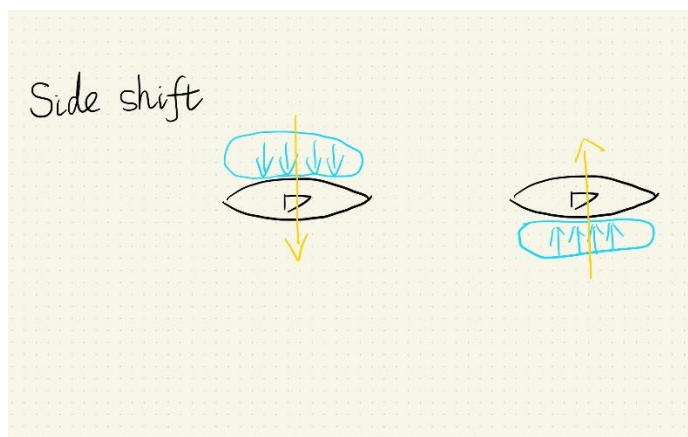


Turn – [Paddling water in the direction shown in sketch in blue circle area to](#)

make boat turn



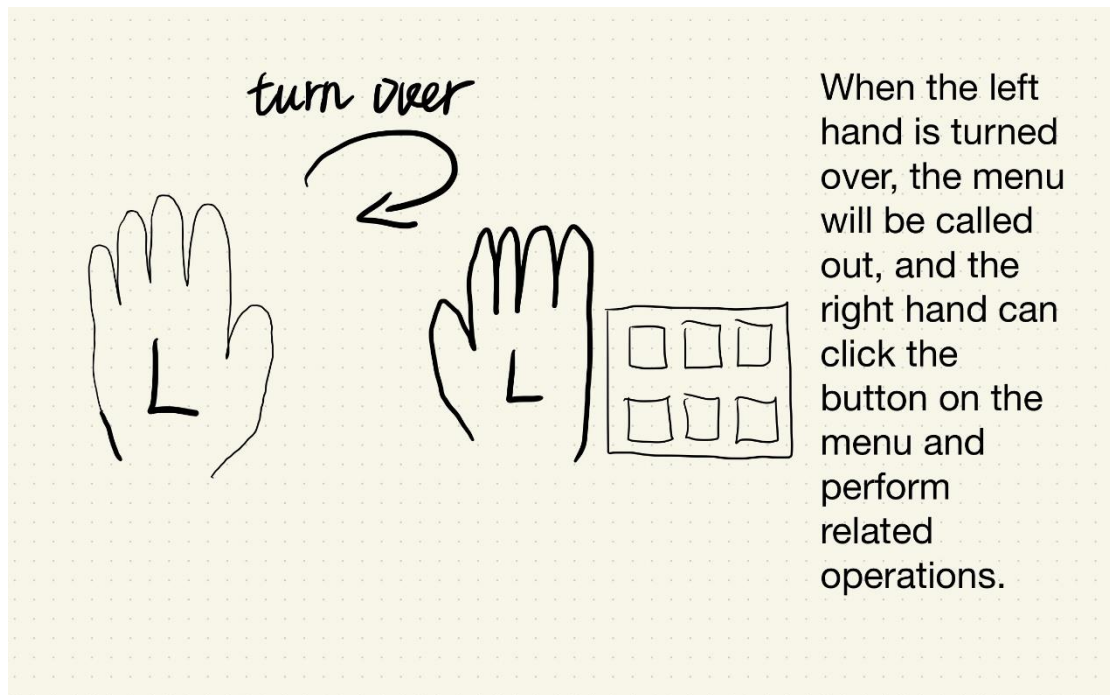
Side shift -- Paddling on side of boat, boat will move sideways



## Special Menu

When player makes a special gesture, special menu can be called out, the special menu will move with hand, and player can click buttons on the menu to perform more operations. (Can refer to Shika Stone in "The Legend of Zelda-Breath of the Wild")

When the left hand is turned over, menu will be called out, and the right hand can click the button on menu and perform related operations.



### Special Skill

Player can click the corresponding button in special menu to use Special Skill.

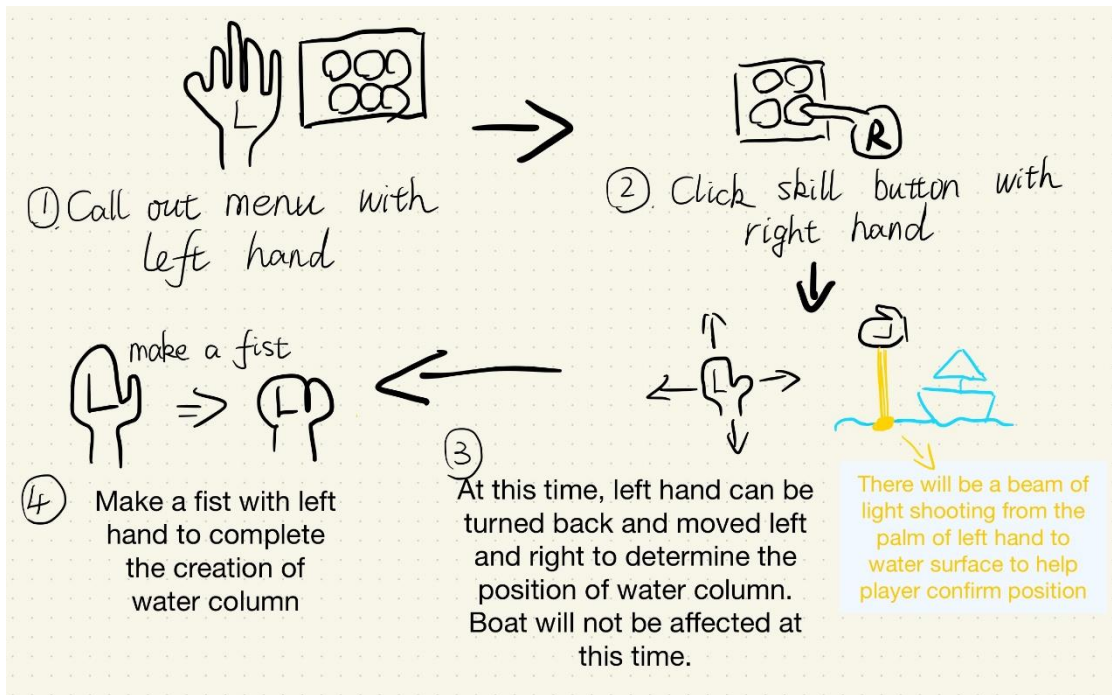
After pressing button, player needs to use other gestures or actions to use the special skill.

**Skill 1 -- Water Column:** A water column can be created on water surface to lift a boat or other objects on the water surface and send it to a higher level of water.

1. Call out the menu with left hand
2. Click skill button with right hand
3. At this time, left hand can be turned back and moved left and right to determine the position of water column. Boat will not be affected at this time. (There will be a beam of light shooting from the palm of left hand to

water surface to help player confirm position)

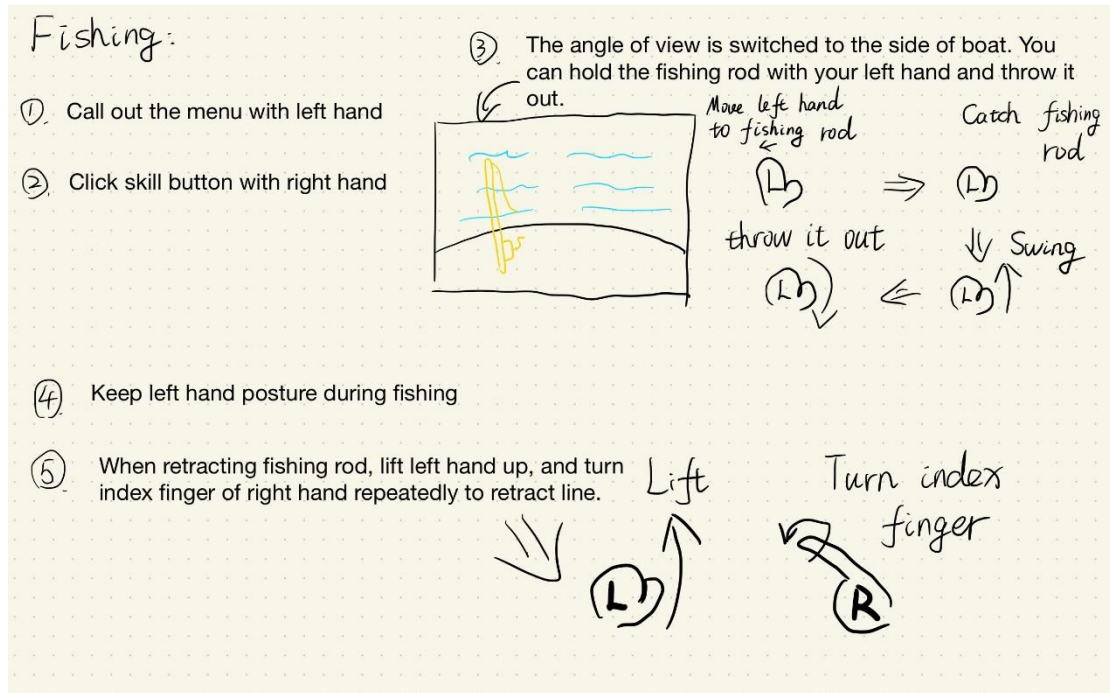
4. Make a fist with left hand to complete the creation of water column



**Skill 2 -- Fishing:** Player can catch things from the bottom of water. The

Mysterious Bag that glows under water requires Fishing Skill to catch it.

1. Call out the menu with left hand
2. Click skill button with right hand
3. The angle of view is switched to the side of boat. You can hold the fishing rod with your left hand and throw it out.
4. Keep left hand posture during fishing
5. When retracting fishing rod, lift left hand up, and turn index finger of right hand repeatedly to retract line.



#### 4. Innovation of game

##### (1). Somatosensory Interaction

Player will control somatosensory with both hands, and virtual hands in game will maintain the same posture and position as player's hands. (For example, when player makes a fist, virtual hand will also make a fist; when player raises the hand, virtual hand will also be raised, etc.)

##### (2). Realistic Somatosensory Interaction

Player doesn't indirectly control game by making simple gestures, but can do some interactive actions the same as in reality. Such as grasping objects with your hands, fiddle with the surface of water, turning mechanism, etc.

Of course, interactive mode of gestures was retained when designing the game.

For example, when launching a Special Skill, player needs to make some gestures to complete it.

### 3. Solve Puzzles and Clear Levels

In order to gain a foothold for more interactive methods, I introduce puzzle factor. There are many mechanisms in game world waiting for player to explore, and different mechanisms have different ways of interacting.

## 5. Game World

The preliminary design is basically a natural world with mountains, trees, rivers and lakes.

## 6. Game Mechanisms

### Reward

1. When boat reaches Blue Crystal, player successfully clears the level and enters next
2. After boat picks up a Star, the nearby Rock will disappear
3. When Pressure Button is activated, the nearby Mechanism Wall will be controlled.
4. When player uses Fishing skills to catch a Mysterious Bag under water, they will get a Star or other object

PS: The disappearance of Stone and the controlling of Mechanism Wall means that obstacle is eliminated and boat can continue moving forward.

### Punishment

1. When boat is illuminated by Red Light, the last Star picked up will return to its original position, and the lost Stone will reappear
2. When boat reaches Dangerous Area, boat will return to spawn point
3. When other objects reach danger zone, they will disappear and return to their original position

### **Obstacle**

Stones: will block the river and hinder the progress of boat

Mechanism Wall: A wall controlled by other mechanism, it will block river and hinder progress of boat.

### **Trap**

Red Beam: a special light source, if boat is illuminated, the last star picked up will return to the initial position. It is controlled by red beam switch.

Dangerous Area: a special area, when boat or any object arrives in this area, it will return to its original position.

### **Mechanism**

Star: can be picked up when boat approaches, and the nearby stones will disappear

Blue Crystal: When boat reaches Blue Crystal, player successfully clears the level and enters next



Small Cube: a cube object that can float on water, has a certain weight, and can be grabbed with virtual hands.

Small Sphere: a spherical that can float on water, has a certain weight, and can be grabbed with virtual hands.

Mysterious Bag: a mysterious bag that sinks in the bottom of water and can emit light. You can use Fishing Skills to catch it. After you catch it, you can get star or other object.

River: a river with rapid water flow. Boat and other objects will follow the direction of water flow. In an extremely narrow river, virtual hands can block moving boat or object.

Movable Water: a special water area that moves back and forth between two places. It can move automatically or use a mechanism to control its movement.

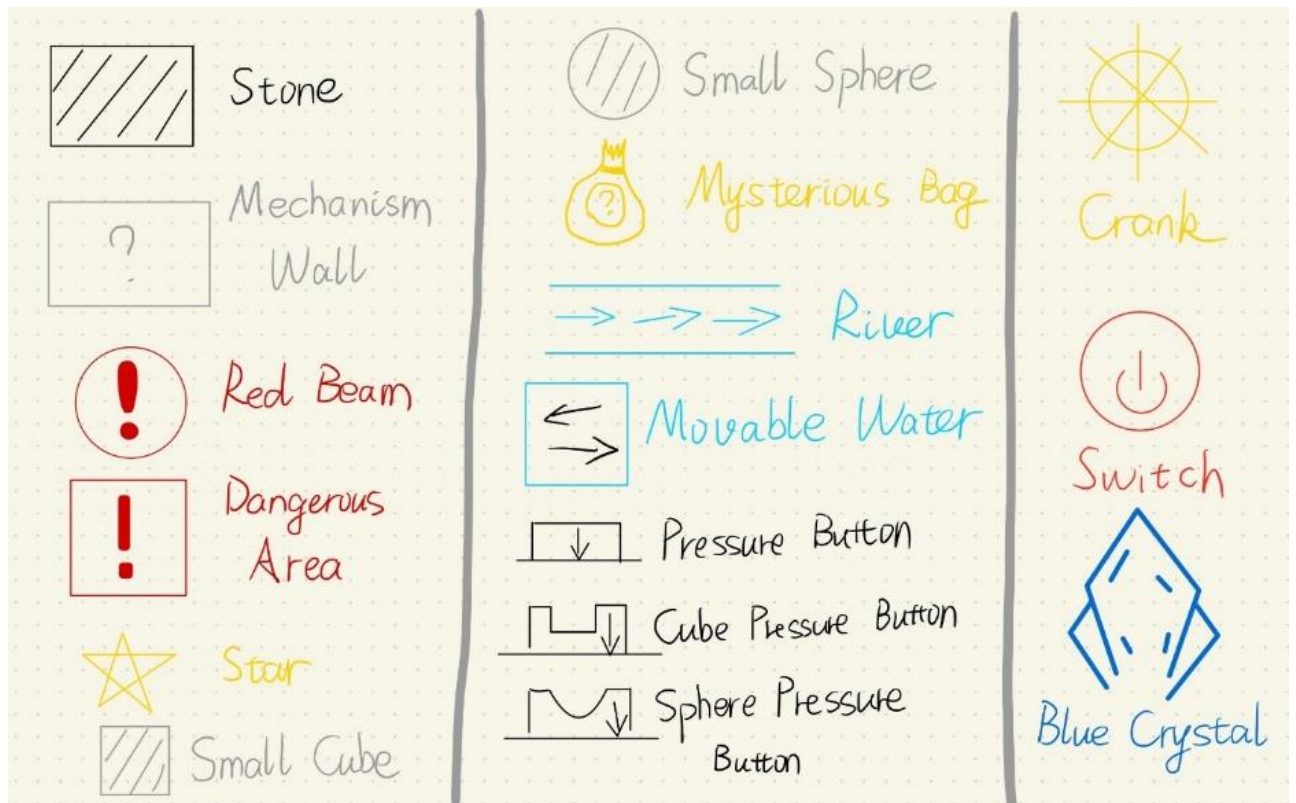
Pressure Button: After pressing it, Mechanism Wall or Movable Water could be controlled. You can place an object or press virtual hand on it. When the pressure disappears, the controlled mechanism will be restored to its original state.

Cube Pressure Button: Only the pressure button of Small Cube can be placed.

Sphere Pressure Button: Only the pressure button of Small Sphere can be placed.

Crank: It can be turned. Turning it can control Mechanism Wall or Movable Water. When it stops turning, the controlled mechanism will stop immediately and maintain the status quo.

Switch: A switch that can turn off Red Beam.



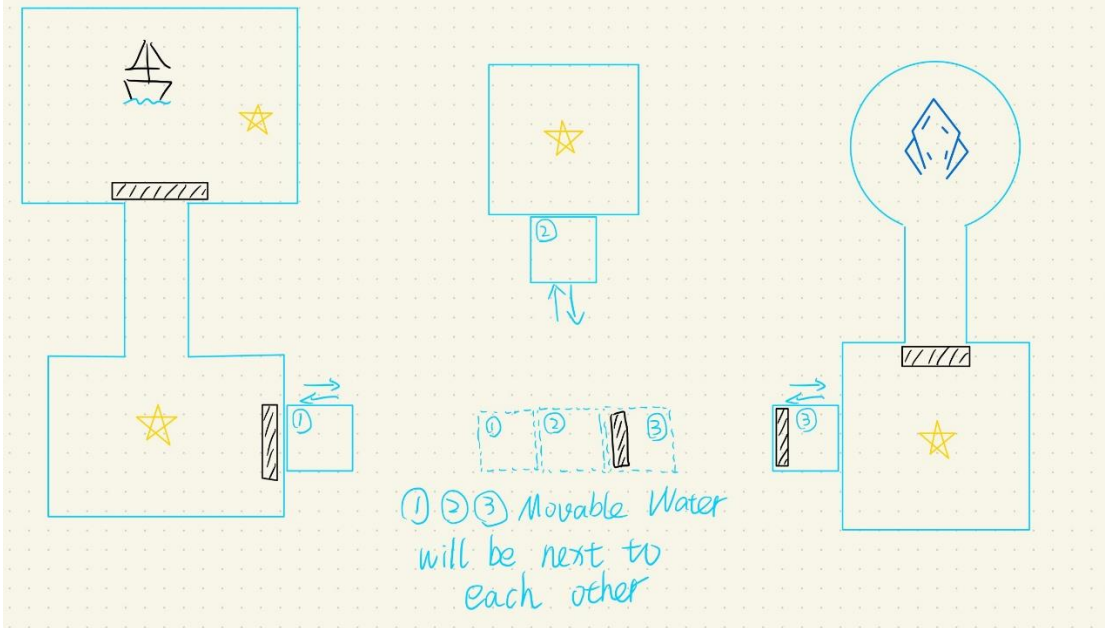
## Level Design

A large number of mechanisms and interaction methods have been designed before, but players cannot master so many gameplay in short time. Therefore, I designed many game levels to gradually let players master these gameplays.

### Level 1

Boat control + Stone will disappear after picking up Star + Movable Water

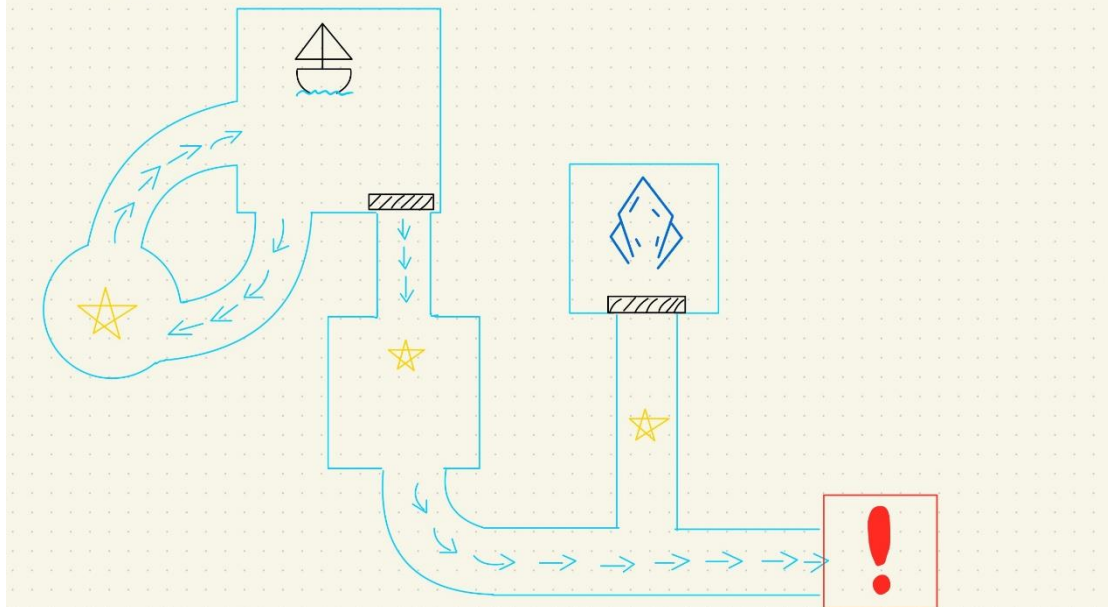
## Level 1



## Level 2

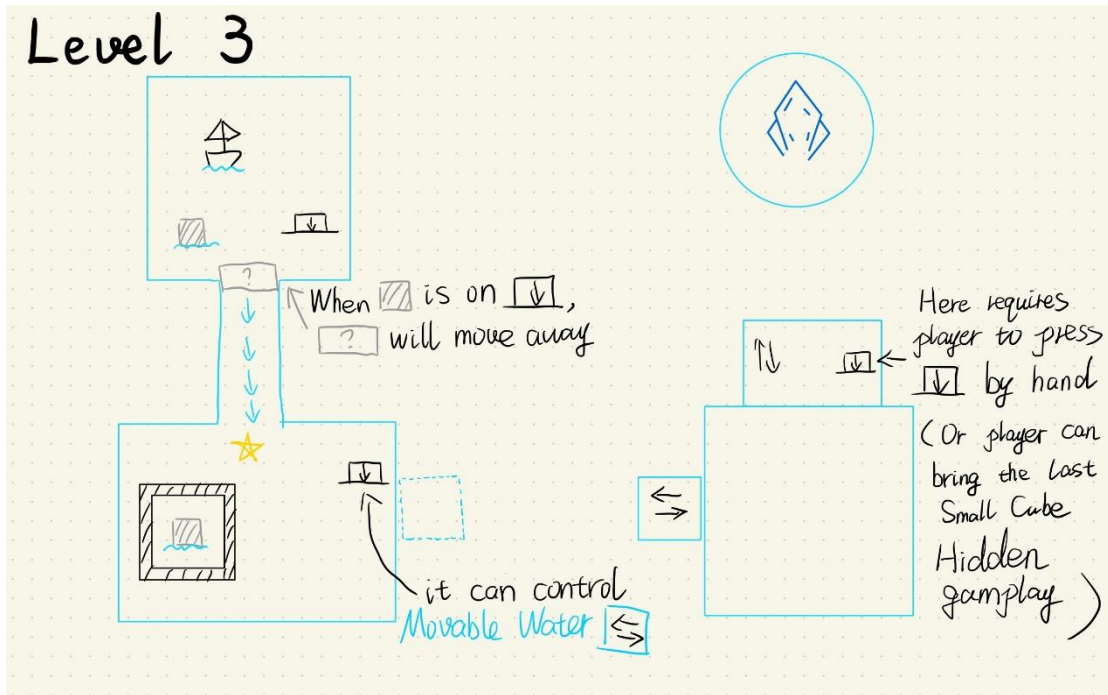
River + virtual hand blocking boat + Dangerous Area

## Level 2



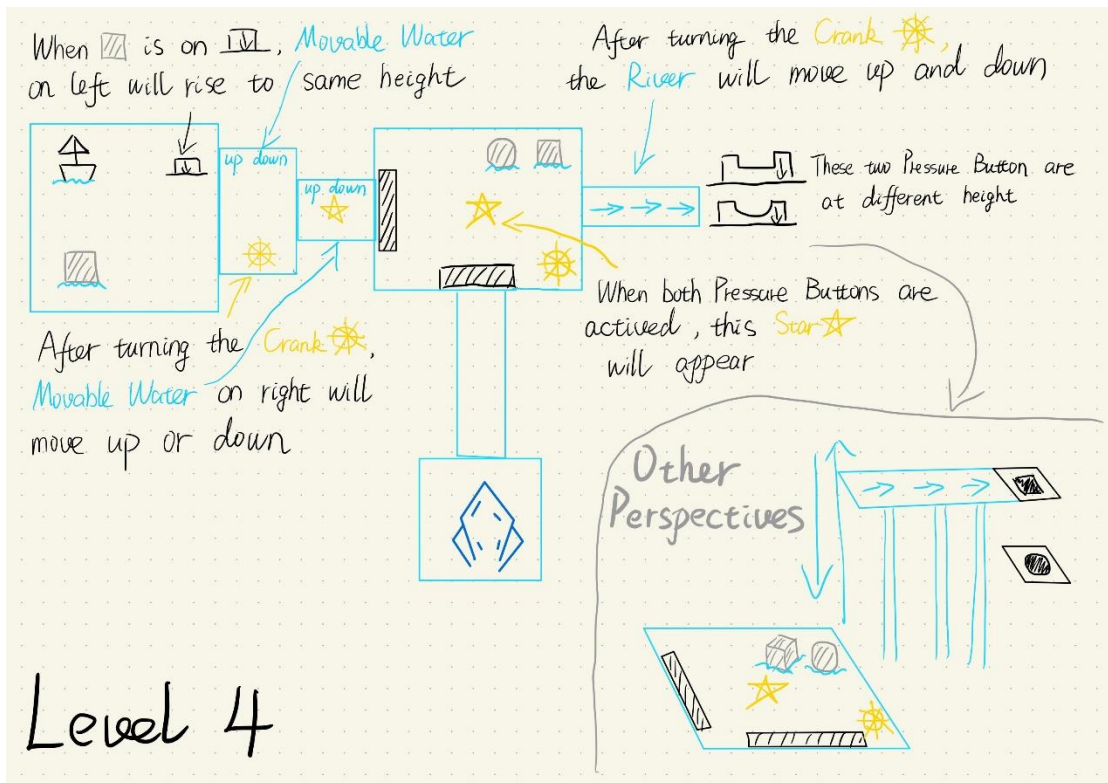
## Level 3

Grab Small Cube + Pressure Button + Mechanism Wall



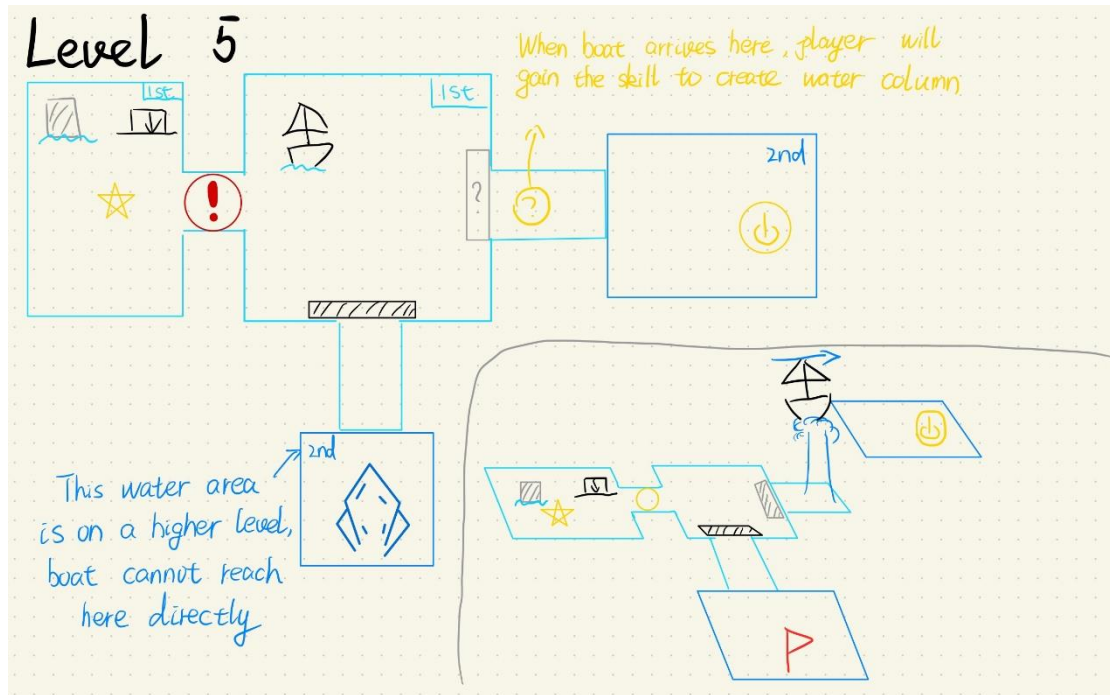
Level 4

Crank + grab Small Sphere + Cube/Sphere Pressure Button



## Level 5

Red Beam + Switch + Skill 1 -- Water Column



## Level 6

Mystery Bag + Skill 2 -- Fishing

