Clean up the room

AR Experiment

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Background

Studies show that messy rooms affect people's health. Dirty rooms are mostly the result of people not having the time or being unwilling to spend time on housework.

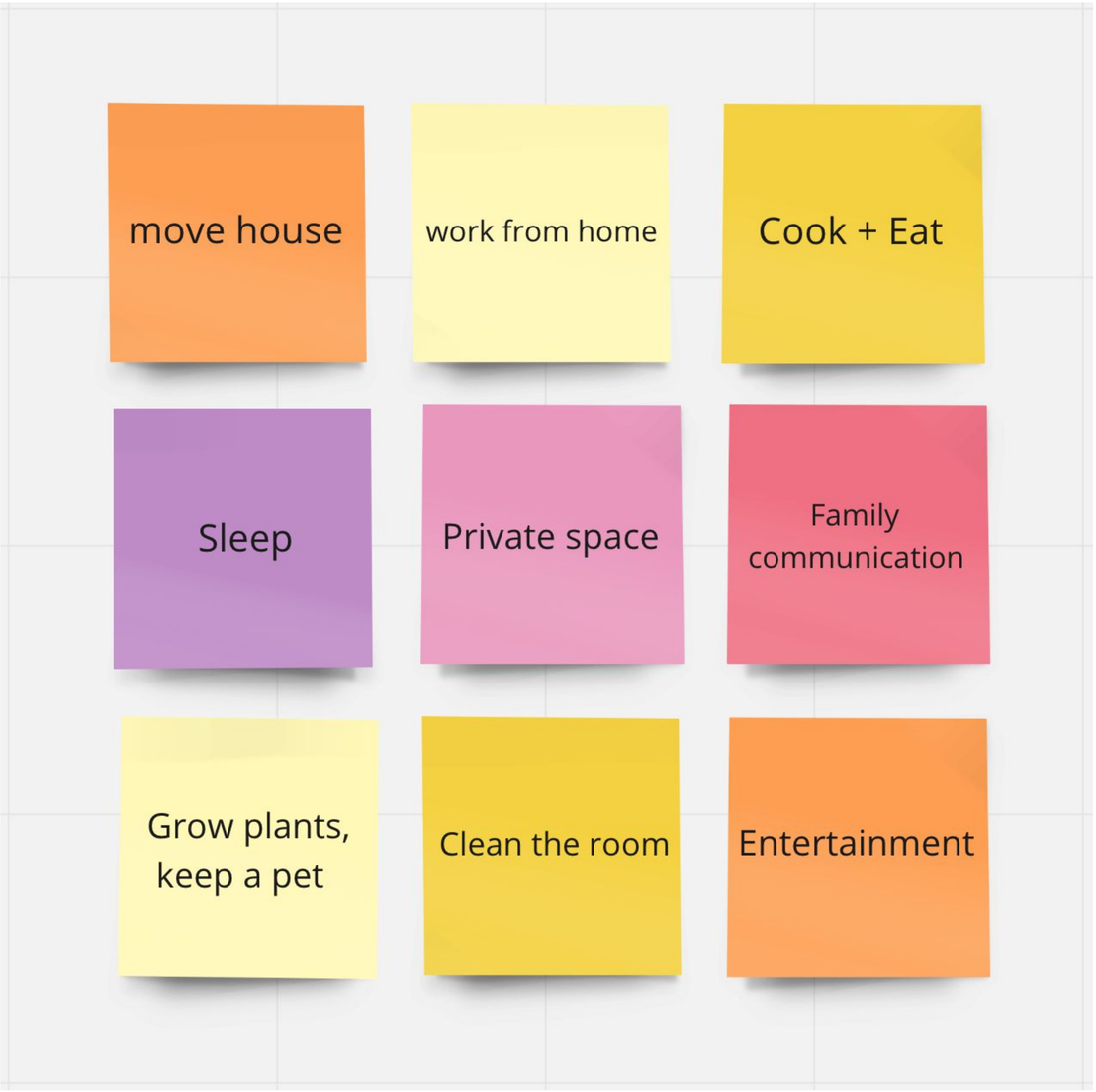
People began to trust their housework on the smart home system. The intelligent machines and systems currently on the market can only do a few simple chores. The housework process of the house is very complex, and the current intelligent system is far from being able to complete the housework with the wisdom of human beings.

If housework rises to the level of survival, will we rely more on ourselves or smart machine systems?

Create theme

What I interest?

- I want to explore whether smart homes can help us completely solve housework problems.
- I am concerned about how the future smart home system will change our lives.
- I want to create playable environment in the limited home space to reflect the value of housework cleaning.



I listed some scenes and actions of people at home to inspire me.

Research

The Key points

- People with clean houses are healthier than those without clean houses.
- The value of domestic work is often less socially valued than wealth creation.
- Smart machines do not save people's time for housework, people still need to do housework.

- When will people realize that they need to clean the room?

  When the accumulated garbage affects the normal life of the individual, people will turn their attention to room cleaning.

- What kind of messy environment has affected our lives?

  Rubbish piled up in the ocean.

Conclusion

- The more space trash and clutter take up, the less space we have to survive.

Opportunity

Focus on the existing living space and build immersive experience environment.

Reflect the value of housework. Improve people's awareness of environmental protection and cleanliness.

Explore the significance of future smart homes at the level of survival.

Design Concept

This is a future smart home system. Rising sea levels due to global warming are forcing people to make their homes underwater. As a result, oxygen becomes a key resource for people to survive in the water, while the storage of rubbish and debris in the water depletes the oxygen resources of the room. At this time, the biggest role of the smart home system is to detect the oxygen content in the room at all times and to send out early warnings in time. When our home is in the ocean, will we uncontrollably produce a lot of garbage? Can we complete housework and cleaning tasks on our own?

Interaction machine

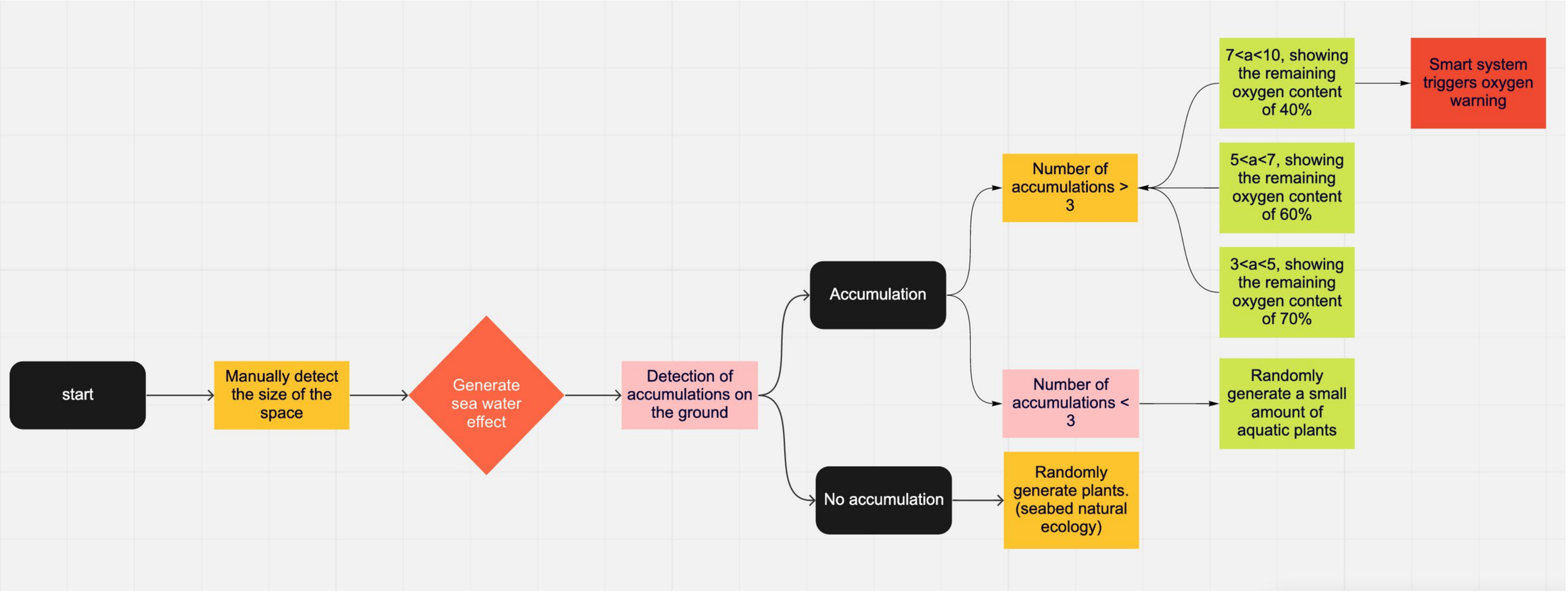
1. Set up an AR immersive scene, the player enters the environment to experience life underwater

2. AR scans the floor of the room and recognizes the accumulated debris, which automatically generates the corresponding marine debris model.

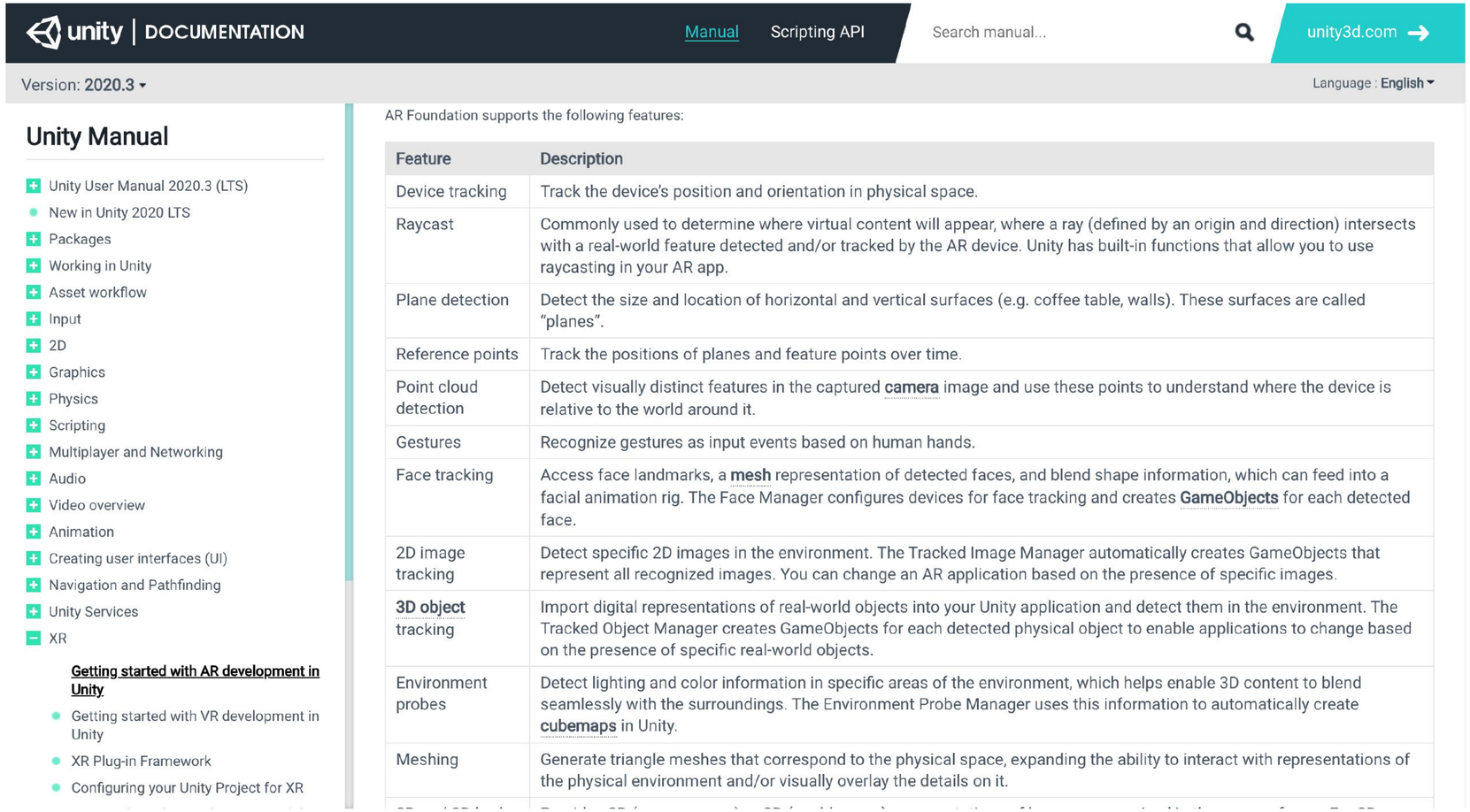
3. When the smart home system recognizes that the amount of garbage in the player’s space reaches the upper limit, it will issue an alarm sound that the oxygen content is too low

4. After the player scans the room, the system recognizes that there is no accumulation on the floor. At this time, some seagrass will be automatically generated in the AR space to form a natural ecological ocean scene.

User Flow


start
Manually detect the size of the space
Generate sea water effect
Detection of accumulations on the ground
Accumulation
No accumulation
Number of accumulations > 3
Number of accumulations < 3
7<a<10, showing the remaining oxygen content of 40%
5<a<7, showing the remaining oxygen content of 60%
3<a<5, showing the remaining oxygen content of 70%
Smart system triggers oxygen warning
Randomly generate a small amount of aquatic plants
Randomly generate plants. (seabed natural ecology)

Technology



Tools

Unity 3D - AR Foundation

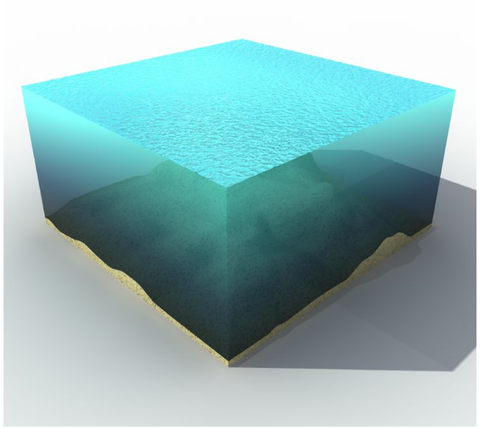
Xcode

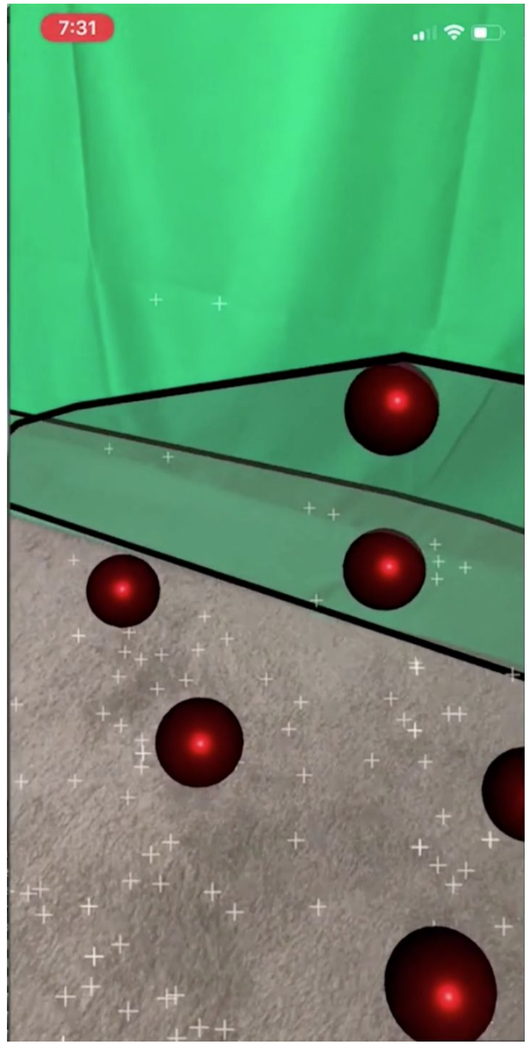
Steps

1. Water material shader
2. AR Foundation
   ---- Point cloud detection
   ---- 3D object tracking
3. Aquatic plants
   ---- model + shader
4. Model of marine debris
5. Oxygen content UI
6. Run and Test

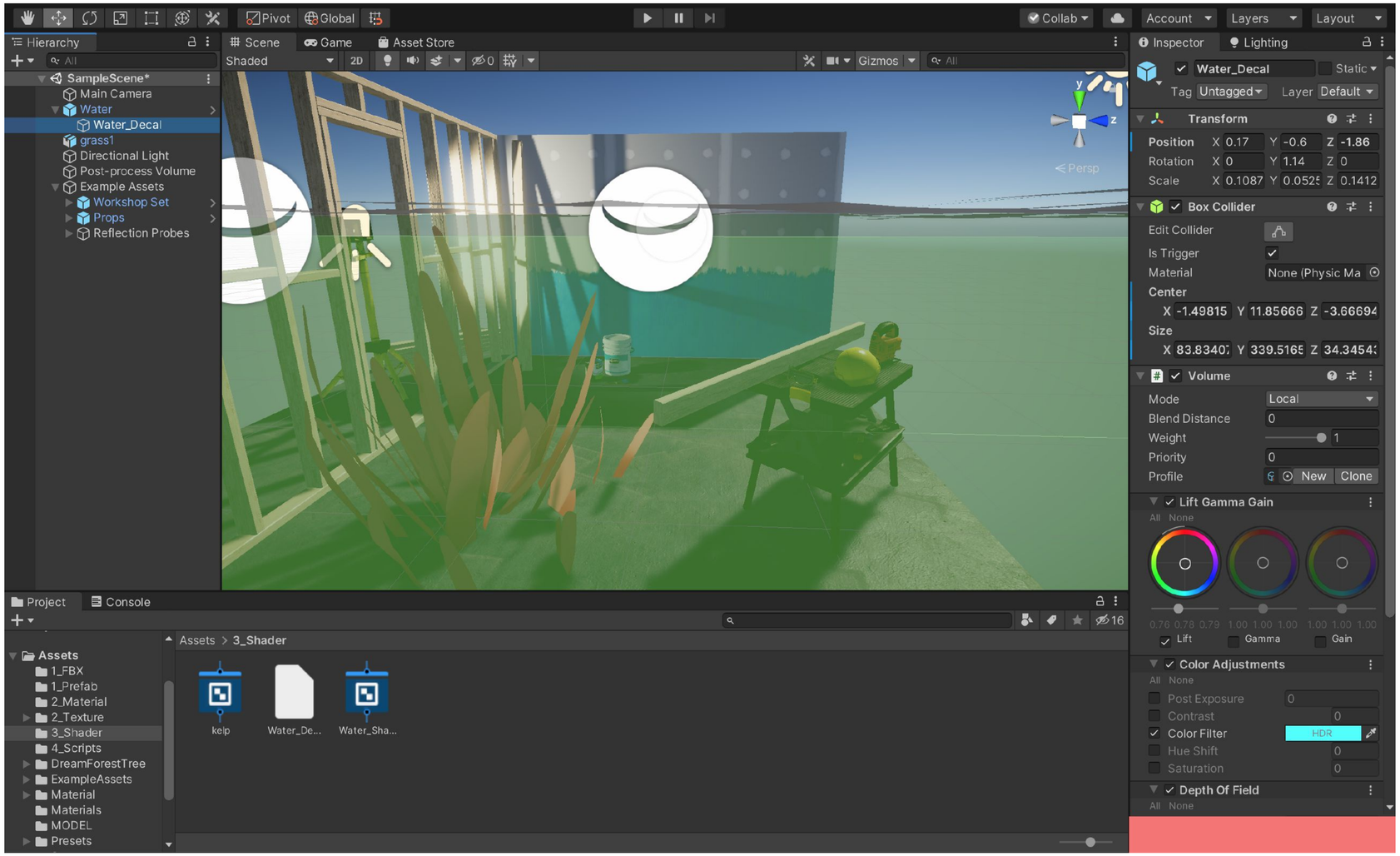
Challenge

- Show the effect of the ocean in the AR environment.
- How does the function in AR Foundation recognize objects on a plane?
- The relationship between the oxygen content UI of the intelligent system and the number of models displayed.
- Try to use machine learning technology in AR recognition and detection of deposit types.





Development



I am currently trying to achieve the effect of the ocean in the AR environment.