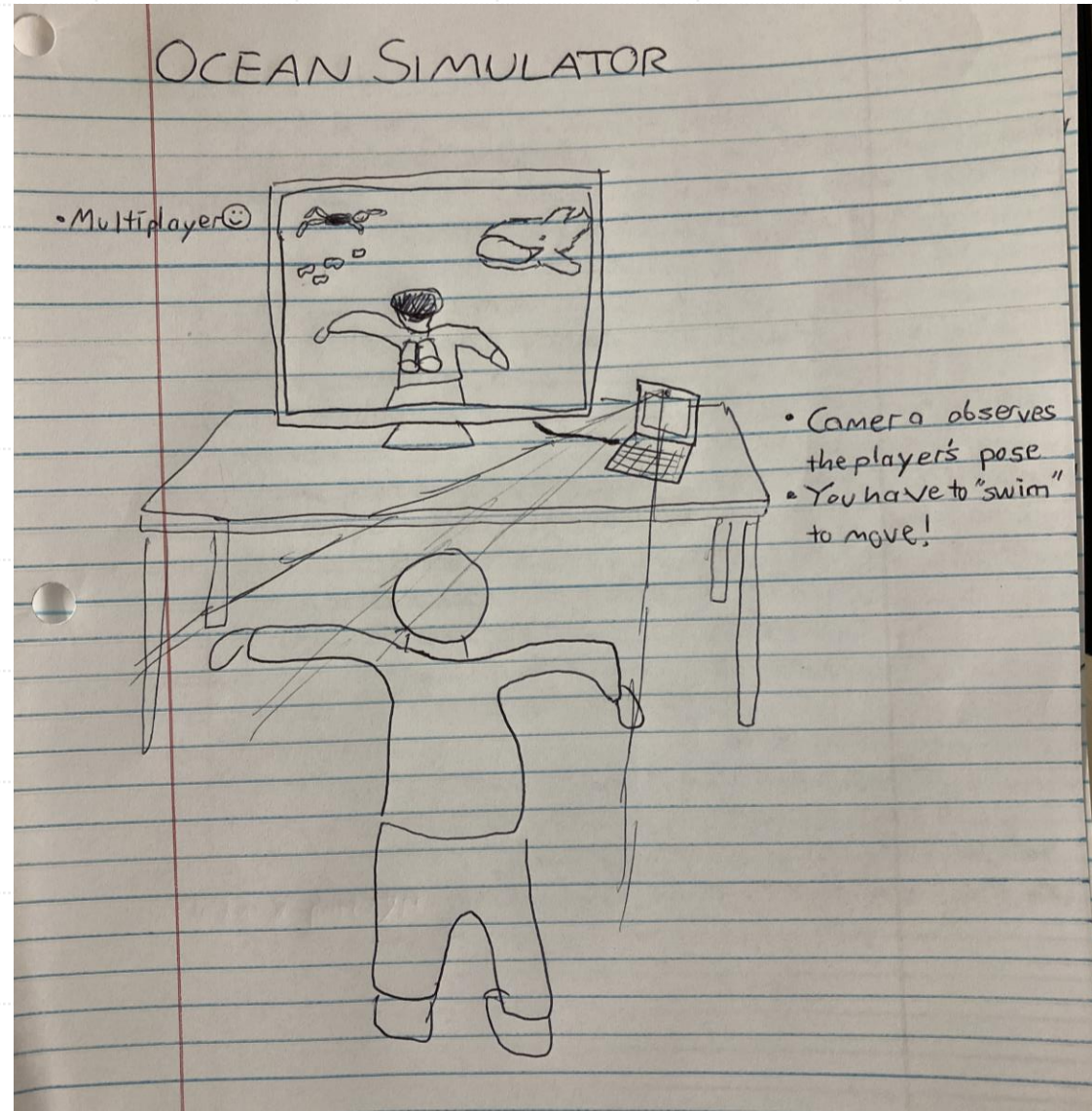# Ocean Simulator

GROUP 4

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Vision

"The ocean simulator will be a video game that lets players virtually "swim" in an ocean with marine life using motion-control."

Target demographics

- Children and adolescents would enjoy this game.
  - For example, the children's video *Baby Shark* is very popular.

- Adults who appreciate nature and marine life and who are willing to experience nature through simulations will also enjoy this product.

- We could ask students from a local high school to test and review the simulation

Competitors

Video games / interactive projects with marine life

- Ultimate Ocean Simulator
  - lets the player "play" as one of the marine animals
- Ocean Mammals: Blue Whale Mari
- Fish Abyss: Aquarium Simulator
- David Attenborough's Great Barrier Reef
  - has many educational videos and articles as well.
- (Besides these, there are many non-interactive underwater experiences available on the Internet, such as regular and 3D videos.)
- However, these games lack motion-controlled input.

Motion-controlled video games

- ✓ *Move!*
- ✓ (Various Kinect and PlayStation games)
- ✓ After several Internet searches, I could not find any motion-controlled marine life / ocean simulator games

Use-case model

- Play swimming in the ocean from your home

- Learn about marine life while playing the game

- Go diving with friends without the risks of real diving

Concept

- 3D model / rendering for animals and diver

- Motion-control for the diver
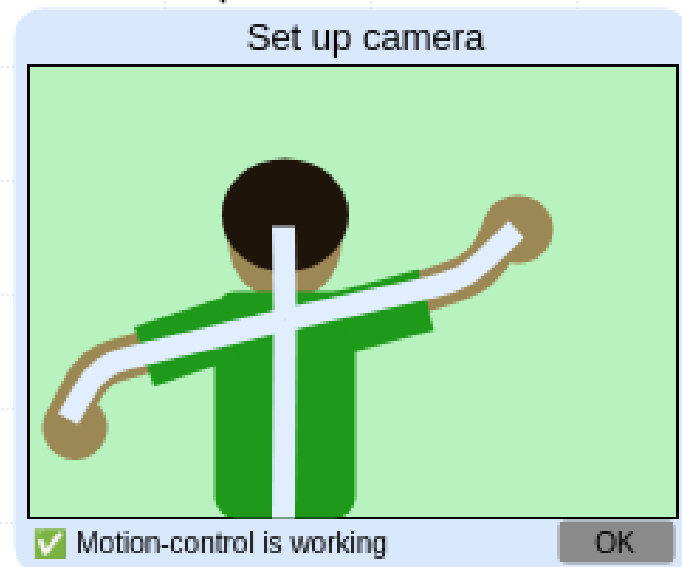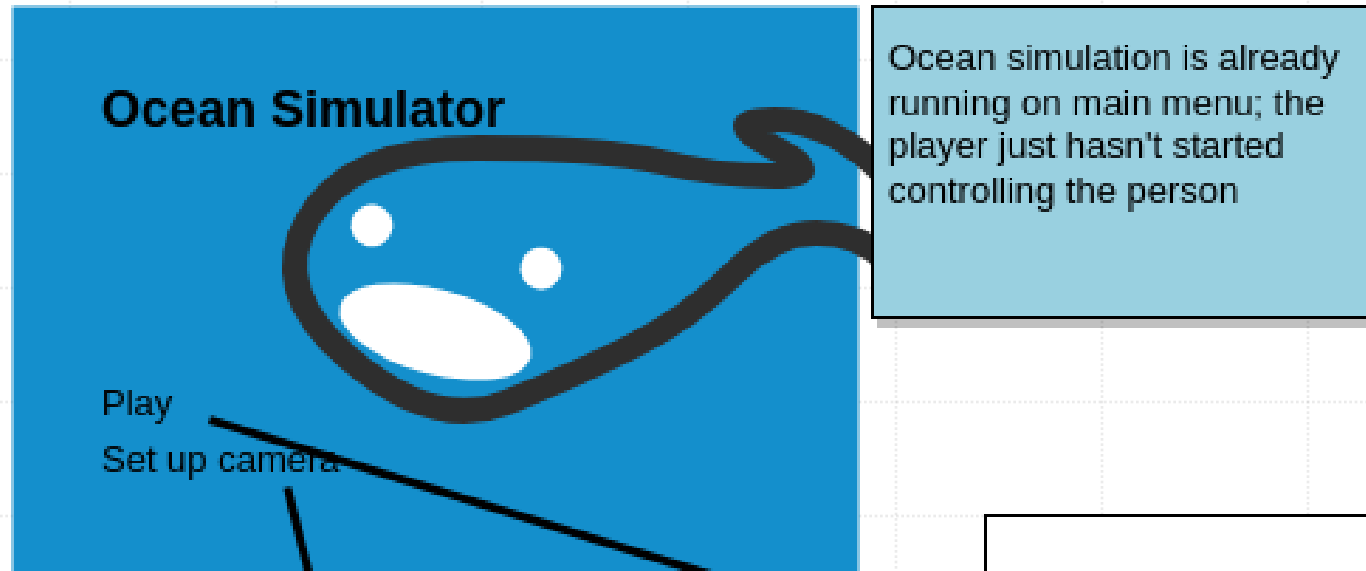
- AI controls the animals' behavior

Business Case

- Free Version: Interact in limited locations, limited range of movement
  - Gather anonymous data about how people interact with animals and sell this data to researchers (for non-advertising purposes)

- Advertise expanded version to academic institutions for interactive learning

- Pay for full version: Unlocks all features
  - Explore different areas around the world
  - See different marine life

Software development plan

- Core features
  - Marine animals – simple
  - Motion-controlled player

- Tools
  - PlayCanvas game engine
  - NPM, TypeScript compiler
  - GitHub Repository

- Extra features
  - Dynamically-generated animals & plants
  - Multiplayer

- Research
  - Marine Life
  - Motion-Input Control
  - PlayCanvas and other software tools

Ocean Simulator

Ocean simulation is already running on main menu; the player just hasn't started controlling the person

Play

Set up camera

Set up camera

✅ Motion-control is working   OK

UI Prototype

Risks

- Unrealistic Schedule (RE: 60% Project Framework)

- Wrong Functionality (RE: 40% Domain Unknown)

- Requirements Volatility (RE: 20% Project Volatility)

- Harmful Functionality (RE: 10% Project Harmfulness)

Questions?

GITHUB: https://github.com/i12345/ocean-simulator ([link to specific commit](#))