**CS211L: SE Term Project**

| Team number | UG2\_Team3 |
| --- | --- |
| Project Title | A website focusing on real-world marine experience and ocean pollution prevention/awareness through education. |
| Document | SE Project Concept Document |
| Existing Work | There are some educational platforms like Wikipedia.org and some marine games |
| Differences | Our interactive platform offers a unique learning experience that immerses users in marine biology and sustainable fishing. Through real-life scenarios, users learn about aquatic ecosystems, face challenges like overfishing, and contribute to research by sharing their data. Our platform combines education, engagement, and active participation to promote ocean conservation. |
| Technologies | HTML, CSS, APIs, MERN. |
| Customers | Users-Scientists, Fisherman, Students and General People |

**Description**

Our interactive website offers a unique educational experience that immerses users in marine ecosystems and sustainable fishing. By taking on the roles of fishermen, scientists, or students, players explore various aquatic environments, face real-world challenges like overfishing, and learn about marine biodiversity. Users gain a deep understanding of their decisions's impact on the ocean by engaging in real-life scenarios or stories randomly generated by AI, quizzes, and real-time weather updates. Additionally, our platform aims to contribute to marine research by streamlining the collection and analysis of marine data about fish catch, myths, unsolved scientific issues, etc. We invite users to upload valuable information, such as datasets or blog posts, which can be converted into usable info for researchers to study and advance in their research.

**Profile of Users**

#### 1. Scientist/Marine Researchers:

* **Data Management and Analysis:** The platform should offer tools for storing and organising research data.
* **Publication Support:** Scientists can collaborate on writing and publishing research papers.
* **Grant Application Assistance:** The platform can provide resources and templates to help scientists prepare grant proposals.
* **Networking Opportunities:** The platform allows Scientists to connect with other researchers, industry professionals, and funding organisations through blog posts.
* **Real-Life Scenarios:** The platform provides a feature that allows users to take on the role of researchers and learn through real-life situations or stories. These stories will be primarily unproven, theory-based, mystery or myth-based.

**2.FisherMen:**

* **Interactive Fishing Simulations:** Fishermen can learn more about their skills and learn about sustainable fishing practices through realistic simulations and real-life scenarios.
* **Real-Time Weather and Ocean Conditions:** Access up-to-date information on weather patterns, ocean currents, and fish migration to optimise their fishing trips**.**
* **Fish Species Identification:** Learn to identify different fish species and their characteristics to make informed decisions about catch.
* **Market Information:** Access real-time market prices and demand for various fish species to maximise earnings.
* **Community Forums:** Connect with other fishermen to share tips, experiences, and information about fishing hotspots as they post this information in blogs.

**3. Students/Common Folk:**

* **Educational Content:** Access various educational resources, including articles, datasets, and interactive real-life scenario modules, on marine biology, oceanography, ocean life preservation and pollution reduction.
* **Species Identification Guides:** Learn to identify various marine species using interactive guides and tools.
* **Community Forums :** Can learn new things through the blogs and discussion forums.
* **Conservation Initiatives and Taking steps towards change:** Discover ongoing conservation efforts, how you can get involved, and how your practices can show significant positive change in marine conservation.

**Technology Stack**

Tech stack:

MERN (Frontend+Backend)

Stream-Lit(For ML integrate web app)

Tailwind CSS (Styling)

Redux (State Management)

Vite (Integrator)

JWT (Authentication)

Socket.io (Notifications/Live Updates)

\*\*Note: Will change based on future requirements.