# ECO HARBOUR TRACKER

Synopsis

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## ABSTRACT

The Fishing Industry Sustainability Tracker is a comprehensive database designed to monitor and manage fishing activities, promoting sustainability and minimizing environmental impact. It encompasses data on vessels, catches, regulations, environmental factors, market trends, and sustainability metrics. Through real-time data collection, analysis tools, and visualization techniques, the database aims to facilitate informed decision-making, enhance compliance monitoring, and foster collaboration among stakeholders. By integrating user-friendly interfaces, scalable architecture, and robust data management, this initiative strives to ensure responsible fishing practices for the long-term preservation of marine resources.

## OBJECTIVES

- **Empower fishers** with accurate and actionable recommendations to increase their catch efficiency and optimize their fishing trips. It also ensures that fishers are not going into those regions with bad climatic conditions.
- **Promote sustainable fishing practices** by providing information on catch regulations and endangered species.
- **Centralized Data Management** by creating a unified platform to consolidate fishing related data, including vessel information, coast information, fishes availability information, catch records.
- **Data-driven Insights and Reporting** by providing visualized information of catch records of fishing of each fisher and availability of each type in fishes in a graphical form.

## EXISTING SYSTEMS

- **FishTrack:** This mobile app, primarily targeting recreational fishing, uses GPS and environmental data to suggest potential fishing spots based on specific fish species and preferred bait. It also allows users to record catches and share locations with fellow anglers. (FishTrack)
- **FishAngler:** Another popular app for recreational fishing, FishAngler helps users find fishing spots, share catches, and connect with other fishermen. It boasts a massive community and offers features like weather forecasts, tide charts, and lunar phases.(FishAngler)
- **GoFish:** Focused on a broader audience, GoFish combines fishing location recommendations with a social media platform. Users can discover fishing spots, learn about different species, and share their experiences with a community of enthusiasts.(GoFish)

## LIMITATIONS OF EXISTING SYSTEMS

- **Data accuracy and relevance:** Many of these apps rely on user-reported data, which can be inaccurate or incomplete. This can lead to unreliable recommendations and frustration for other users. Also environmental factors, fishing techniques, and specific target species might not be adequately considered, leading to recommendations that don't match the individual user's needs.
- **Sustainability focus:** These apps primarily focus on maximizing catch rates, which can potentially contribute to overfishing and unsustainable practices. Majority apps present in this domain lack emphasis on responsible fishing methods, protected species awareness, and catch reporting limitations might hinder overall sustainability efforts.

## FUNCTIONALITIES

- **Risk Analysis and Early Warning:** This module provides comprehensive information on key weather parameters such as temperature, wind speed, precipitation and sea state. The module not only offers current weather updates but also includes historical data for trend analysis and prediction modeling. It also provides alert notification to the fisherman case of bad weather detection.

- **Fish Detection:** Think of this as the fisherman's digital guide to the underwater world. It provides details of the fish species available at a specific location, giving fishermen an edge by allowing them to plan their fishing expeditions based on the fish species present. Whether it's exploring new locations or checking the species diversity in a particular region, this functionality equips fishermen with vital information to optimize their catch.

- **Education and Outreach:** Beyond being a tool, this functionality is a platform for change. It's a beacon of education and awareness, promoting sustainable fishing practices. By collaborating with NGOs and organizations dedicated to preserving marine life, it not only educates but also encourages users to be a part of the solution, fostering a community focused on preserving our oceans for future generations.

- **History and records**: It provides all the previous and current catch records of a particular user and also visualizes it in graphical form. The module provides insights into fishes caught, trends over time, and comparisons between various vessels.

- **Reward System:** Consider this functionality as a pat on the back for sustainable efforts. By incentivizing sustainable fishing practices, it encourages users to align with conservation goals. The rewards offered by the organization act as a motivation, recognizing and prioritizing users who contribute to maintaining a sustainable ecosystem.

- **Availability Trends:** This functionality is the market analyst for fishermen. It offers insights into the availability of different fish species and their demand in the market. By understanding the trends and demands, fishermen can make informed decisions about when and where to fish, while contributing to sustainable fishing practices.

- **Zone Monitoring and Alert System:** This innovative feature acts as a vigilant guardian within the application to monitor and safeguard against unauthorized fishing activities in protected Marine Protected Areas (MPAs) or restricted zones. As fishermen navigate the waters, the app provides real-time notifications, alerting them when they approach or enter these regulated zones. Simultaneously, the system triggers alerts to

relevant government and environmental authorities, promptly notifying them of any incursion into prohibited or restricted areas.

**TOOLS PROPOSED**

- HTML ,CSS , React for Front End Development
- Node.js and Express.js for Back End Development
- MySQL , XAMPP Apache for Database Management
- AWS for hosting and deployment