**PROJECT NAME:** **NEMO**

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| # | SOFTWARE NEEDS | DESCRIPTION |
|  | Central Monitoring Software | Central monitoring software is a type of application designed to monitor and manage various aspects of a system or network from a centralized location. It provides administrators with a comprehensive view of the system's health, performance, and security, allowing them to quickly identify and address any issues that aris. |
|  | Processing of the Data From the Sensors | Processing data from sensors involves several steps to transform raw sensor readings into meaningful information that can be used for various purposes. |
|  | Feeding System | A feeding system is a mechanism or setup designed to deliver food or feed to animals, humans, or industrial processes in a controlled and efficient manner. The design and implementation of feeding systems vary widely depending on the specific requirements of the application, whether it's for livestock, pets, humans, or automated manufacturing processes. |
|  | Communication | Communication is the process of exchanging information, ideas, thoughts, or feelings between individuals, groups, or entities through various mediums and channels. It's a fundamental aspect of human interaction and plays a crucial role in virtually every aspect of life, including personal relationships, business transactions, education, governance, and entertainment. |
|  | Supply Chain Management | Supply chain management (SCM) is the process of overseeing the flow of goods, services, information, and finances as they move from suppliers to manufacturers, wholesalers, retailers, and ultimately to consumers. It involves the coordination and integration of various activities, including sourcing, procurement, production, inventory management, logistics, and distribution, to ensure the efficient and effective operation of the entire supply chain. |
|  | Testing | Testing is a crucial phase in the software development lifecycle (SDLC) where software applications, systems, or components are evaluated to ensure they meet specified requirements, perform as expected, and are free from defects or errors. It involves executing software with the intent of finding defects, verifying functionality, and validating that the software meets the intended purpose. |
|  | Dbms | A Database Management System (DBMS) is software that facilitates the creation, maintenance, and use of databases. It provides an interface for users and applications to interact with databases by storing, retrieving, updating, and managing data efficiently. |
|  | Image Recognition System | An image recognition system, also known as a computer vision system, is a technology that enables computers to interpret and understand visual information from digital images or video footage. It involves algorithms and techniques designed to analyze, process, and interpret visual data to recognize objects, patterns, faces, text, and other relevant information within images or video frames. |
|  | Version Control System | A Version Control System (VCS) is a software tool that helps manage changes to source code, documents, and other files over time. It enables multiple users to collaborate on projects, track modifications, revert to previous versions, and maintain a history of changes. |
|  | Weather Monitoring Software | Weather monitoring software is a specialized application designed to collect, analyze, visualize, and forecast weather-related data. It integrates data from various sources such as weather stations, satellites, radar systems, and numerical weather prediction models to provide users with up-to-date and accurate information about current weather conditions, as well as forecasts for future weather patterns. |

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| # | HARDWARE NEEDS | DESCRIPTION |
|  | Monitoring Cameras | Two types of cameras are integral to farm operations: security cameras enhance safety around the premises, while pressure-resistant underwater cameras gather crucial data on fish behavior and water conditions, aiding in decision-making processes. |
|  | Underwater Sensors | These sensors play a pivotal role in collecting vital data from the pool environment, including temperature, pH levels, and dissolved oxygen concentrations, enabling farm managers to make informed adjustments to optimize fish health and productivity. |
|  | Air Oxygenation Systems | Essential for maintaining optimal dissolved oxygen levels in pool water, these systems promote healthy fish growth by ensuring sufficient oxygen supply(within the range of 5-8mg/L), reducing stress levels, and supporting metabolic functions critical for fish health. |
|  | Fish Transport Tanks | These specialized tanks are essential for safely transporting fish from the farm to processing facilities or market destinations maintaining product quality during the transit. |
|  | Environmental Monitoring Stations | Deployed to gather more precise local weather data in the farm's vicinity, environmental monitoring stations enable farm managers to anticipate and respond to weather-related challenges, ensuring operational resilience and continuity in the face of environmental variability and extreme events. |
|  | Backup Generators | Critical for maintaining uninterrupted automation and power supply within the farm. They ensure continuous operation of critical systems and equipment, and mitigate potential economic losses associated with downtime. |
|  | Water Circulation Pumps | Responsible for maintaining water quality and circulation, these pumps ensure delivery of clean, oxygen-rich water to fish tanks while removing waste. |
|  | Water Testing Kits | Essential for on-the-go monitoring, these kits provide quick, accurate results to assess water quality parameters. |

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| # | SUPPORT NEEDS | DESCRIPTION |
|  | Maintenance and Repair Services | Scheduled Maintenance: Set up regular maintenance schedules to ensure equipment and facilities are in optimal condition.  On-Call Services: Provide access to technicians who can respond swiftly to unexpected breakdowns or emergencies.  Spare Parts Inventory: Maintain a well-stocked inventory of spare parts to minimize downtime. |
|  | Training Services | Workshops: Conduct hands-on training sessions to educate personnel on best practices and new technologies.  Certification Programs: Offer certification courses to validate individuals' proficiency in specific skills or equipment operation.  Seminars: Organize informational seminars to keep stakeholders abreast of industry developments and regulatory changes. |
|  | Aquatic Consulting Services | Aquaculture Experts: Provide consulting services from seasoned professionals with expertise in aquaculture, offering guidance on best practices, optimization, and problem-solving. |
|  | Regulatory Compliance Assistance Services | Permits, Licenses, Approvals: Assist clients in navigating the complex landscape of regulatory requirements by helping them obtain necessary permits, licenses, and approvals.  Regulations: Keep clients informed about relevant regulations and help them stay compliant with evolving legal frameworks. |
|  | Financial Assistance Services | Risk Assessment: Conduct risk assessments to identify potential financial risks and develop strategies to mitigate them.  Funding Proposals: Assist clients in preparing persuasive funding proposals to secure financing for projects or expansions.  Budgeting Assistance: Offer guidance in creating and managing budgets to optimize financial resources and achieve long-term sustainability. |



