**Fish Counting System**

**Introduction**

**1.1 Purpose**

The Fish Counting System is designed to automate the process of counting fish in various environments such as fisheries, aquaculture farms, and research facilities. Traditional fish counting methods are often time-consuming, prone to errors, and require a lot of human effort. With this system, we aim to provide an efficient and accurate way to monitor fish populations. By using modern technology like image processing and sensors, the system will help in managing fish stocks, ensuring sustainable practices, and improving overall productivity.

**1.2 Project Objectives**

The primary goal of this project is to develop a system that can count fish in real-time with high accuracy. The objectives of this project include:

1.2.1 Developing an automated counting mechanism to reduce manual labor.

1.2.2 Enhancing accuracy using advanced detection technologies like image processing and AI.

1.2.3Ensuring scalability so the system can be used in different environments such as fish farms, rivers, and research facilities.

1.2.4Providing real-time data analysis to help in decision-making for aquaculture management.

**1.3 Intendent Audience**

This project is intended for various groups who can benefit from automated fish counting. The main audiences include:

1.3.1Aquaculture Farmers – To monitor fish population and optimize feeding schedules.

1.3.2 Fisheries and Marine Biologists – For research and conservation efforts.

1.3.3 Software Engineers & Developers – To improve and enhance the technology for broader applications.

**1.4** **Project Scope**

The Fish Counting System aims to be a cost-effective and efficient solution for monitoring fish populations. The scope of this project includes:

1.4.1 Developing software and hardware components for automated counting.

1.4.2 Testing the system in controlled environments such as aquariums and fish farms.

1.4.3 Ensuring the system is adaptable for various water bodies like lakes, rivers, and oceans.

1.4.4 Providing real-time monitoring and data storage for future analysis.