Team Physh
"FISH" Fish Identification Search History

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Problem Statement

- Dam operations are known to have a negative impact on fisheries such as blocking their natural pathways

- There are over 91,000 dams in the country posing many potential threats to the fish populations

- A comprehensive study needs to be conducted on these possible effects

- The Arizona Game and Fish Department (AZGFD) and the Grand Canyon research and Monitoring Center (GCMRC) have been monitoring and conducting research on the effects of the local Canyon Dam on rainbow trout fish.

- A challenge they have been faced with is collecting a high volume of data from rainbow trout fish such as their growth rates, movement, and overall survival.

- Currently they have scientist going out 3-4 times a year to collect data with specialized tools, but AZGFD wants a way for the everyday angler to be able to gather and update information on these trout.

Flow Chart / Clients Current Software

Current Process
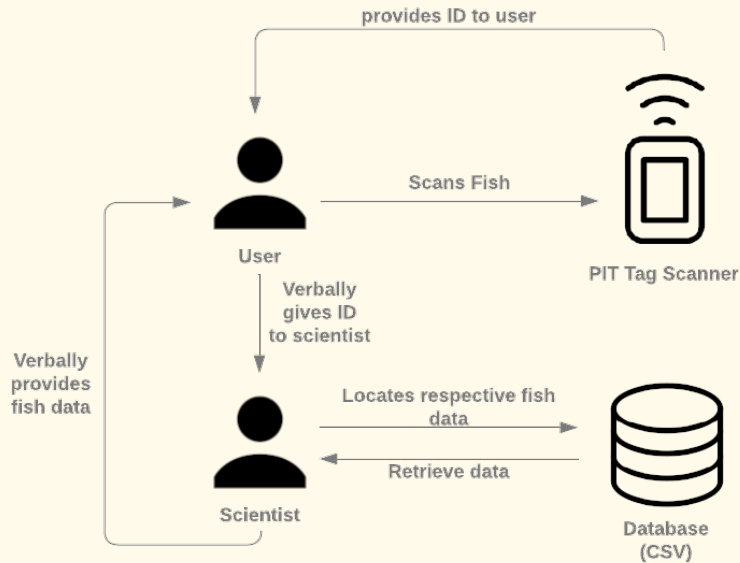
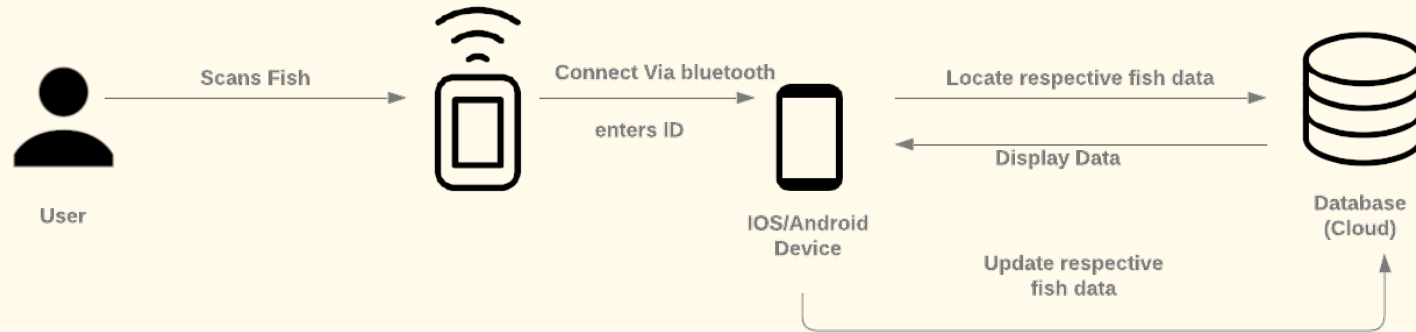## Current Issues

- 1 : Not user friendly
- 2 : Runtime

Our Solution:

Fish Tracker App

Software Overview

User — Scans Fish → [scanner device] — Connect Via bluetooth / enters ID → IOS/Android Device — Locate respective fish data → Database (Cloud)

Display Data ← Database

Update respective fish data

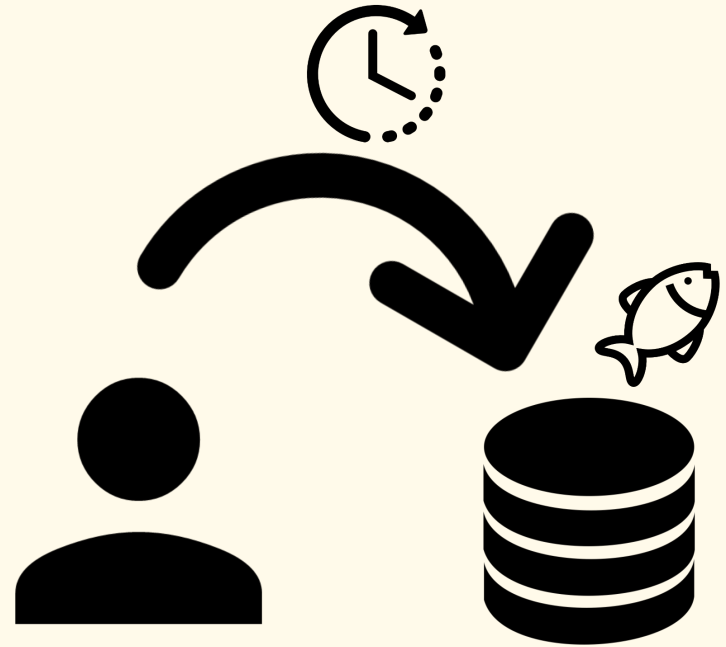- Scan (tagged) fish
- Transmit code
- Find data
- Upload data

Software Functionality

- Can view various information
- Can update information
- Works offline
- Makes whole process faster
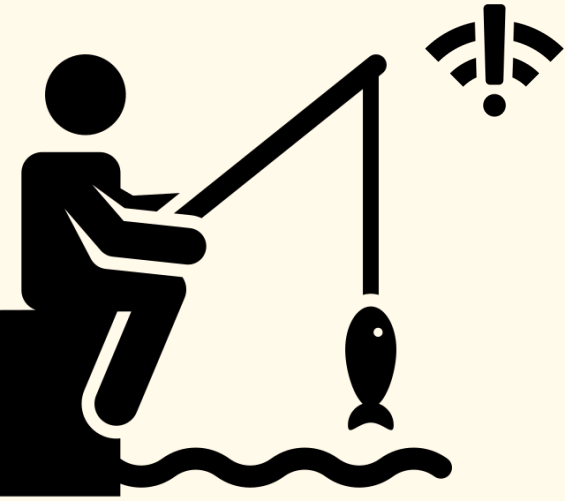
How will it solve the problem?

- Anglers will want to view data
- In turn more data will be collected
- Helps AZGFD
- More information on trout
- Much better than old system

Key Requirements

Functional Requirements:

- Data Acquisition

- Connection with PIT Scanner via Bluetooth

- Interface for data acquisition

- Interface for data viewing

- Stretch Goals:
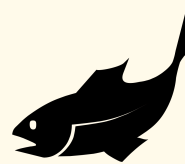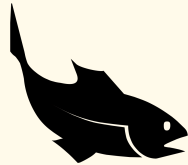   - Profile System
    - Gamification

Key Requirements

Environmental Requirements:

- Build on existing system
- Use of PIT Scanner
- Mobile Application
- Adaptability/Scalability

Non-Functional Requirements:

- Simple User Interface
- Accurate Data
- Speed
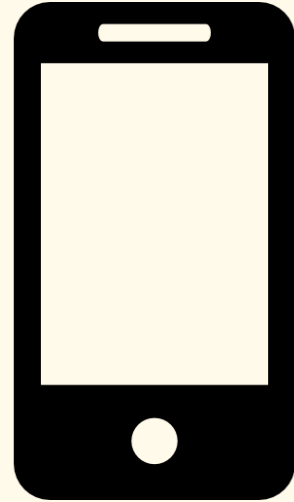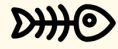
Technical Choices

➔ Cross Platform
React Native

➔ Bluetooth **Bluetooth**Classic

➔ Database , MySQL

➔ Hosting AWS Amplify , amazon RDS

→ Server Risks

→ availability zones

→ back ups

Synchronous Automatic Backup

Amazon RDS

Amazon RDS Secondary
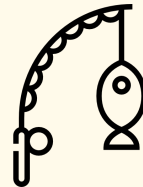
Server 1

Server 2
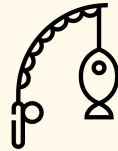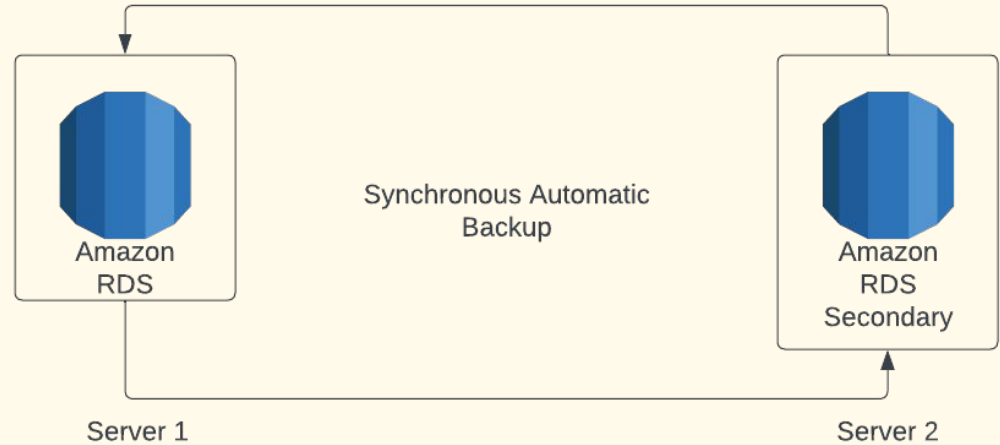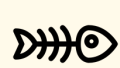
Risk and Feasibility
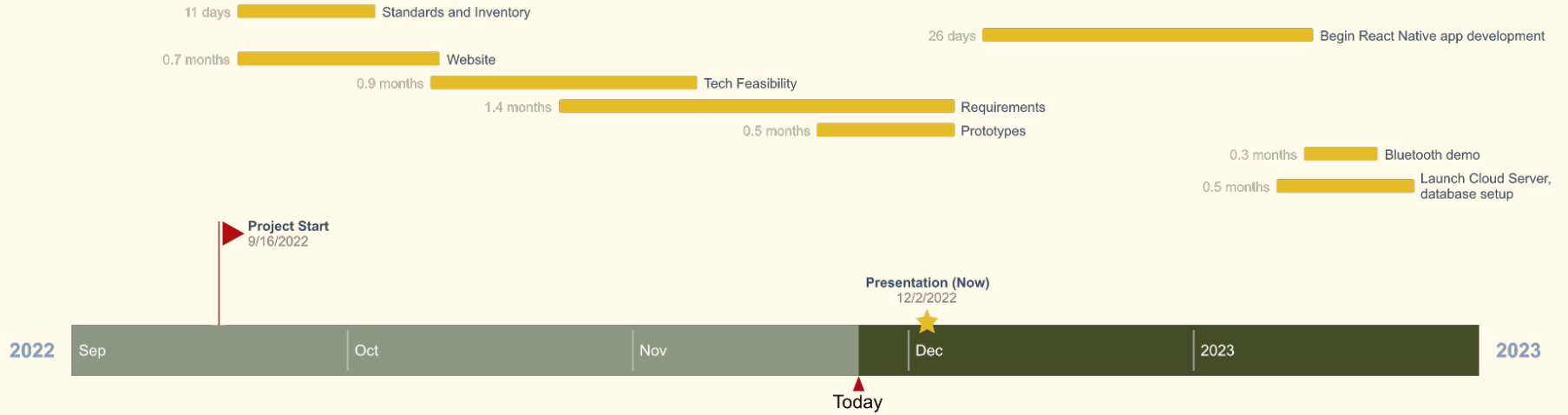
→ **Client Risks**

   → Inaccurate data uploaded

   → inability to connect via bluetooth

   → Multiple users attempting to update fish data

Schedule

11 days — Standards and Inventory

26 days — Begin React Native app development

0.7 months — Website

0.9 months — Tech Feasibility

1.4 months — Requirements

0.5 months — Prototypes

0.3 months — Bluetooth demo

0.5 months — Launch Cloud Server, database setup

Project Start
9/16/2022

Presentation (Now)
12/2/2022

2022 | Sep | Oct | Nov | Dec | 2023 | 2023

Today

Closing

- Problem: Anglers uploading data to fish database is inconvenient

- Client: Dr. David Rogowski

- Goal: Cross platform app for local anglers

NORTHERN ARIZONA UNIVERSITY

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