

# CRAB CAKES

Team: Jered Angous, Daniel Arden, Alexander King, Anthony Narvaez

Sponsors: David Rogowski (AZGFD), Mara Dzul (USGS), Pilar Rinker (USFWS)

Mentor: Scott LaRocca



## Motivation:

Researchers at the USGS, AZ Game & Fish Department, and US Fish & Wildlife Service are collecting vital data on endemic fish in the Colorado River to advise policy decisions.

However, they are currently using outdated, unmaintained software with an unintuitive interface, which slows down their research operations.

## Solution:

We are building a modern, flexible data entry application with robust backups, customizable fields and full offline capabilities. This will remove data entry errors, eliminate reliance on outdated software and ensure that researchers can save and add data without internet.

## Key Features:

- Customize fields for different study designs
- Compatible with Bluetooth PIT Tag Readers
- Auto-backup to external storage
- Export to .TSV File Format
- Full offline capabilities for fieldwork

## Technologies:



Flutter



Dart



SQLite



Bluetooth

## Data Flow:

User scans fish for PIT Tag

User enters data into active study's field

Program compares entered information to historical entries, alerts user of data mismatch if exists

User corrects entered data

User finishes entry, clicks "Save record" button.

Program saves entry into database

Program backs up data to external drive

At end of trip, data is exported to .TSV, and imported into main database.

## Challenges:

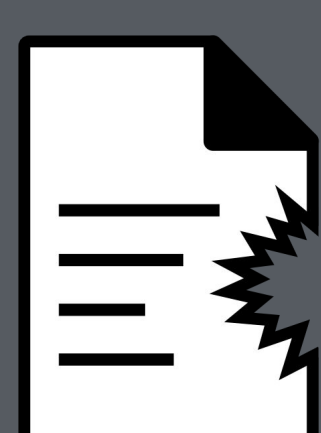
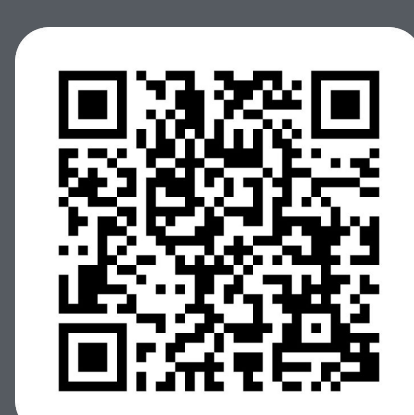
We face challenges in developing robust, cross-platform Bluetooth support, and creating an intuitive yet flexible field definition language.

## Future Work:

Our future work includes making the fields customizable for other agencies, integrating Bluetooth connectivity, and finalizing the UI's design.

## Conclusion:

Our goal is to create a high quality tool to aid researchers in effectively collecting data to advise policy decisions which are crucial to maintaining the health of the critical piece of infrastructure that is the Colorado River.



**Shark  
Bytes**