Calling Bailey

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1 General Information

1.1 Description

The system is designed to take user inputted queries about the state of the ocean, and return it in a timely manner.

1.2 Purpose

The purpose is for those stranded in the ocean to have a means of receiving information to better their chances of survival through receiving information about the current status of the ocean. These properties include weather, ocean current waves, and other warnings.

1.3 Scope

The scope is a finite range of the ocean such that all other systems are within range.

2 Module Hierarchy

This section provides the hierarchy of the modules that will be implemented, from bottom up.

- M1: Receiving Module

- M2: Data Processing module

- M3: Data Acquisition Module
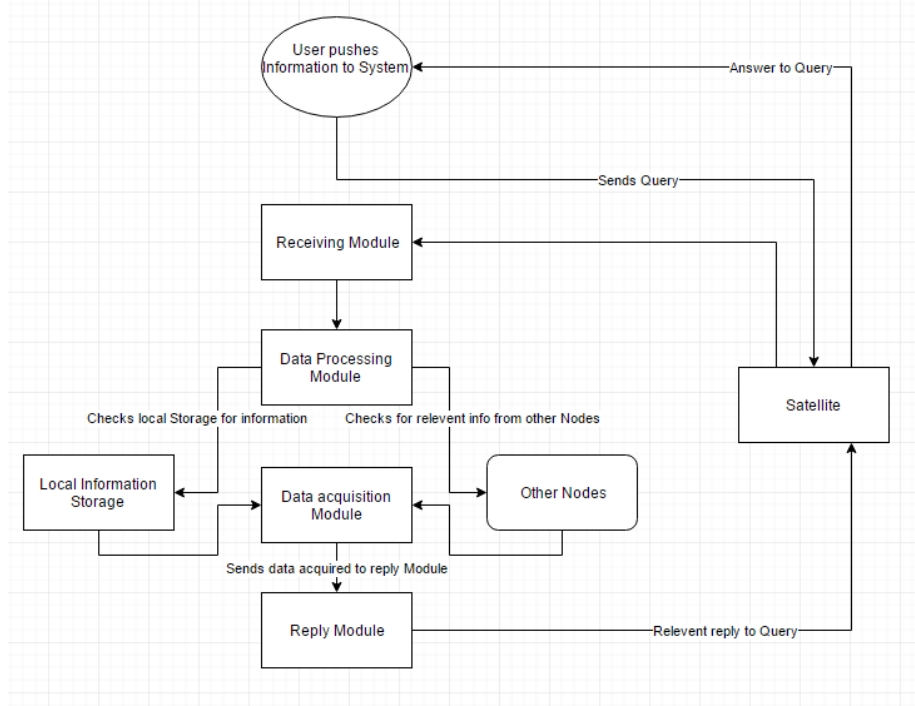
- M4: Reply Module

3 System Architecture

Figure 1: System Architecture

4 Requirements

4.1 Assumptions

The requirements for the system are based off the following assumptions:

- The system receives messages from satellite phones through text messaging, and replies to the user through text messaging.

- All nodes contacting the system have a unique, immutable signature.

- The system has a reliable set of satellites that it has already established or may establish a connection to. The system is able to use these satellites to perform its duties.

- The weather node will update the system's weather log file.

4.2 Functional Requirements

1. The system shall be able to take in user input through text messages.

2. The system shall reply to the user through text messages.

3. The system shall be able to decipher input messages into queries if possible, and shall notify the user if the message is invalid.

4. The system shall support processing for queries of the type weather, warning, and current.

5. For queries of type weather, the system shall reply to the user with an update of the latest weather status from the weather system.

6. For queries of type warning, the system shall reply to the user with any warnings that have been sent within the past time period.

7. For queries of type current, the system shall reply to the user with an update of the latest current status from the ocean current detection system.

8. The system shall store logs for errors, weather, warnings, and ocean currents.

9. The system shall have an option for the user to request instructions on how to use the system.

4.3   Non-Functional Requirements

1. The system shall process queries quickly

2. The system shall reply back to the caller quickly

3. The system shall have easy instructions to follow in the help messages

4. The system shall be easy to access

5 Traceability Matrices

5.1 Trace Between Requirements and Modules

Requirements	Modules
R1	M1
R2	M4
R3	M2, M4
R4	M2
R5	M2, M4
R6	M2, M4
R7	M2, M4
R8	M3
R9	M1, M2, M4

6 Waiting Room

Due to time constraints, we were unable to finish implementing the following
classes:
Query
QueryType
QYeryWhen
Store
due to not having finished the required stubs for simulations

7 Features

The following are implemented:
Ping from satellite
picking best satellite in according to ping
user input