
PROJECT PROPOSAL

PiFeed – Feed Your Pets with a Raspberry Pi

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[ECE 4564] NETWORK APPLICATIONS DESIGN

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1 Concept of Operations

The purpose of PiFeed is to be able to remotely monitor and control a fish tank and cat feeder from the internet. Figure 1 shows a high level diagram of the proposed system.

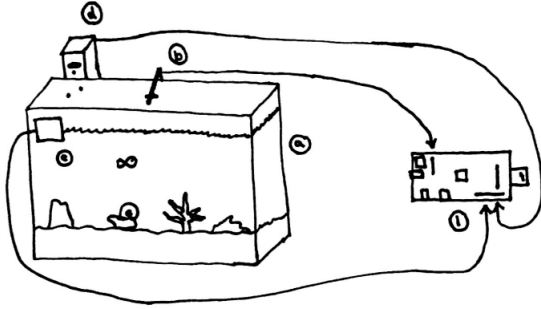


Figure 1: A high level diagram of the fish tank automatic feeder system. (a) Aquarium. (b) Pi camera used for monitoring fish. (c) Sensors used for monitoring aquarium environment. (d) Automatic fish food feeder.

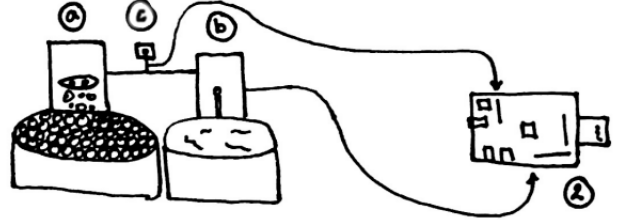


Figure 2: A high level diagram of the cat automatic feeder system. (a) Automatic cat food feeder. (b) Automatic cat water feeder (c) Pi camera used for monitoring cat.

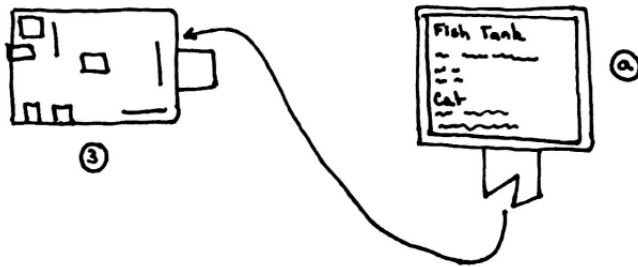


Figure 3: A high level diagram of the subscriber client.



Figure 4: A high level diagram of the controller system. Merely a computer application.

2 System Overview

PiFeed is separated into the following modules: PiFeedControl, PiFeedPub, and PiFeedSub.

2.1 PiFeedControl

The purpose of this module is to control the hardware components responsible for monitoring and dispensing food/water.

2.2 PiFeedPub

The purpose of this module is to publish messages to a message broker containing information generated by the sensors.

2.3 PiFeedSub

The purpose of this module is to subscribe to an exchange on the message broker to receive messages containing information generated by the sensors and to process the received messages.

2.4 Testable Requirements

2.5 Use Case Diagram

3 Hardware List

4 GitHub Details

5 Project Schedule