Team 11 Project Report

Assignment 2: Wishing Well

Caleb White, Cheng-Chiang Chen, Quinton Miller

Project Description/Interpretation

The Wishing Well is a system that allows for publishing of messages and consumption of messages, based around a location and subject. In this case, the places are buildings around campus and each place has its own subjects. Imagine walking past a building, and typing up a message about what you think if the building's classrooms. Later on, another individual can walk by the building and get their phone out, and view a message that had been said, or published, about the location, on that specific subject.

Now, our system doesn't use mobile devices or GUI interfaces, but the underlying functionality is accomplished in python using two raspberry pi's. The published messages would be stored in a persistent queue using RabbitMQ and stored in a local MongoDB database. Here the published messages reside in various queues where they wait to be consumed.

System Function

Our system uses a Twitter stream to receive commands from the user based on a hashtag, for our team this is #ECE4564T11. This commands can either be a publish request which will create a new message in the queue or a consume command which will get messages from the queue. Along with this, the command has a place, a subject, and a message. The place will correspond to a RabbitMQ exchange and the subject will be a particular queue in that exchange. Once the command is received, the capture Raspberry Pi will store the command in a MongoDB database then light up an RGB LED through the GPIO port either red or green depending on if the Pi received a publish or consume command. Finally, the capture Pi will either send the message to the repository Pi based on the place and subject or will get messages from the repository Pi based on the place and subject and output the message to the console.