Kyzr: A Collection of Buzzwords

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Project Overview

Our project is a global virtual torch-passing that will involve a full stack server implementation of an Open Source, global, social networking NFC virtual interaction. We will explore full stack development and software development using an Agile methodology which will be implemented in a five sprint scrum setup. Our minimum viable product is an Android app that sends post requests to a server and updates a database and a map API. Our stretch goal is transferring a virtual baton from one phone to another via NFC and sending post requests to a server with GPS data about the transaction. The server should then update a map API with this GPS data.

Learning Goals

Patrick:

> Learn MongoDB setup, management, and integration with Flask. Learn how to make networked, social, 'connected' Android apps. This will involve NFC integration, making server requests, and potentially Google Map APIs. Finally, I would like to learn how to design UI for more complex Android apps.

Byron:

> Working with a server and developing security and git integration, as well as website hosting. Also managing a remote server securely. Implementing a full stack application which connects with Android phones. Essentially, learning a bit about everything that goes on in a real world application with server integration.

Franton:

> Use Python as a web backend and learn about the Flask web microframework. Gain experience developing a full stack application and learning about connecting the database and website/application to each other.

Andrew:

> Learn how to make "social" Android apps, learning how to work with NFC, learning about how servers handle requests, implement databases, etc.

Implementation

Our project will require a server running Debian; a backend written in Python using the Flask web microframework; a front end website written in HTML, CSS, and Javascript; a database using MongoDB; and an Android application written in Java and XML.

Schedule - Six Sprint Scrum Methodology

Sprint 0:

- Purchase server
- Organize ourselves and plans

Sprint 1:

- Proof of concept Android app connectivity
- Proof of concept NFC Android connect
- Complete server setup
- Beginning of python backend

Sprint 2:

- Begin database and user management
- Finalize Android app GUI and begin integration with NFC
- Finishing python backend
- Frontend website design

Sprint 3:

- Finish Android application completely
- Begin finalizing integration of all parts, and polishing up code

Sprint 4:

- Debugging & testing

Sprint 5:

- Finishing touches and integration
- Buffer week, when stuff goes horribly wrong (do 80% of the work here)

Collaboration Plan

Mainly taking ownership of different parts, and separating the tasks into Android development, python backend development, server management, database management and frontend development. However, we will all help out each other on different problems throughout, and during weekly collaboration meetings we will share our learnings and go through changes in code.

Risks

- Doing too much at once
- Serious server errors, shutdowns
- User management
- Large data management

Additional Course Content

- Javascript, HTML and CSS website frontend design
- MongoDB
- Full server implementation on Debian 7 server
    - Git remote repository
    - SSH access
    - Full integration
    - Networking security
- Android Application
    - Java
    - XML
- Website Backend
    - Python Flask web microframeworks