



Matthew Harris

Senior Project

Proposal

getNote

The Mobile Application

Table of Contents

| | |
|---|---|
| <i>Background and Motivation</i> | 3 |
| <i>Problems to be Addressed:</i> | 3 |
| <i>Solution:</i> | 4 |
| <i>Methodology:</i> | 4 |
| <i>Goal:</i> | 5 |
| <i>Deliverables:</i> | 5 |
| <i>Justification:</i> | 5 |
| <i>Non-Exclusive Limited IP Granting to Department:</i> | 6 |
| <i>References:</i> | 7 |

Student: Matthew Harris

Project: getNote¹ Android² application

Collaborators: Dr. Melody Stapleton

Client: getNote

Users: Students studying computer science.

Background and Motivation:

In CINS 465 my group and I created an online note taking/sharing website. After that semester I inherited the project and modified it to allow anyone with a .edu email to join the site. This allows students to take notes online for their computer science classes, and view notes taken by other students. This service only works if the user has a computer that is connected to the Internet. I would like to expand the site to have a mobile application, which would have an offline mode for their notes.

Problems to be addressed:

- ⤴ Learning and creating an Android application
 - Creating a SQLite³ database
 - Querying, inserting, selecting, removing from SQLite® database
 - Managing files on the mobile device
 - Connecting to the device hardware
 - Camera, Storage, Connectivity (Wi-Fi^[20], Cellular)
 - Creating a friendly user interface (UI)
- ⤴ User authentication with pre-existing backend (MySQL⁴, PHP⁵)
 - Implementing Simple Object Access Protocol (SOAP) or HTTPS
- ⤴ Creating backend PHP© methods for connecting device to web server
- ⤴ Syncing device to backend including some form of file merge⁶

¹ getNote is a registered domain and the Intellectual Property of Matthew Benjamin Harris

² Android is a registered trademark of google Inc. [1]

³ SQLite is in the public domain. [11]

⁴ MySQL “The world’s most popular open source data base” [12]

⁵ Copyright © 2001 – 2011 The PHP Group [13]

⁶ Low priority, possible future implementation

Solution:

Once the application is opened on the mobile device, it will allow users to log in and out of the application by authenticating through the website database. A logged in user will be capable of editing and creating notes. They will be able to upload photos from their devices as notes, and view their old notes. I would like to keep a copy of all the notes on the device so that the application would work offline. Once the application is online and connected to the server it would compare all the notes' modification dates and update whichever database was outdated.

To tie this application in with the website's backend I will have to learn and implement some kind of SOAP or HTTPS service request. This is needed since the application will be in Java with an SQLite® database, which, once connected to the Internet, will be connecting, and passing information back and forth, with my Linux⁷, Apache⁸, MySQL®, and PHP© (LAMP) backend.

Methodology:

I will be coding in Eclipse⁹ using the Android® Software Development Kit (SDK). I will be temporarily storing the code base for the project in my Dropbox¹⁰ to allow development from home and school on different machines. I will be using the Android® emulator for development testing as well as pushing working builds to an actual device.

⁷ Copyright © 2011 Linux.com. [18]

⁸ Copyright © 2011 The Apache Software Foundation [19]

⁹ Copyright © 2011 The Eclipse Foundation [14]

¹⁰ Copyright © 2011 Dropbox [15]

Goal:

My goal is to deploy an effective, user-friendly Android® application for note sharing.

Deliverables:

I will deliver all required documentation by the course advisor, and my faculty advisor. I will deliver a code complete application, with a fully functional backend that is all fully commented.

Justification:

getnote.org is a very useful website for students, but has many limitations. In today's classrooms and study groups more and more students are taking pictures of white boards with their Android devices. This project would give them a quick and easy way to upload and share them with their classmates. Also being able to easily view their notes would allow for easier review, as they would not have to take out a laptop or even need an Internet connection. In addition, teaching myself Android® would help in the ever-changing job market.

What I would like to take away from this project is a better understanding of the Android® SDK and the Model View Controller¹¹ (MVC) pattern in regards to mobile development, and be more proficient at the use of the IDE Eclipse©. In addition, I plan to learn more about the implementation and use of some type of SOAP so that I can connect this application to my web server.

¹¹ Model-View-Controller (MVC) is a classic design pattern often used by applications that need the ability to maintain multiple views of the same data. [17]

Non-Exclusive Limited IP Granting to Department:

The authors of this work hereby grant non-exclusive and limited publication rights to the department and university to freely display the project summary and/or poster within the physical confines of the university and/or on its web presence. We also grant non-exclusive and limited academic usage of the project documents, for course demonstration purposes.

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- [19] <http://www.apache.org/>
- [20] Definition for wifi: Wireless local area network: a local area network that uses high frequency radio signals to transmit and receive data over distances of a few hundred feet; uses Ethernet protocol. wordnetweb.princeton.edu/perl/webwn