getNote

SIMPLE NOTE-SHARING

Matthew Harris

Senior Project

Project Plan

getNote

The Mobile Application

Table of Contents:

Student: Matthew Harris

Project: getNote[1] Android[2] application

Collaborators: Dr. Melody Stapleton

Client: getNote

Users: Students studying computer science.

Summary

    I will be creating an Android™ application that will allow users to take and view their class notes on their Android™ device, in addition to allowing them to sync their notes with the pre-existing web server.

Tasks – *Development*

Updating getNote:

    First I will be updating getnote.org to allow users to upload .jpg files to allow for the Android™ application to sync with the web server, when that time comes. Second I will also be updating the way notes are flagged for offensive or copyrighted materials. As it stands there is no way to flag a .pdf or .jpg. Lastly I will be updating getnote.orgs database to save modification date of files so when the time comes I can compare the last modified date of a file on the server and on the device, to determent which is out of date.

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[1] getNote is a registered domain and the Intellectual Property of Matthew Benjamin Harris
[2] Android is a registered trademark of google Inc.

Creating SQLite Database:

Using the Android™ SDK to write an SQLite[3] database class that will create my

applications database the first time the application is run on any device.

Querying SQLite Database:

Using the model controllers I will plan out and create queries needed for the

application.

Managing Data:

Using the Android™ SDK to create a notes directory (or save pointers to the files)

to save, update, and load files (.txt, .jpeg, .pdf).

Device Hardware:

Using the Android™ SDK to determine if the device has a camera for taking and

storing a photo as a note as well as determining if the device has connectivity to

the Internet (Wi-Fi or cellular). [6][7]

User Interface (UI):

With the user experience in mind, I will be creating a UI that is easy and

understandable, in order to create an application the user will enjoy using.

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[3] SQLite is in the public domain.

Backend:

I will be creating a handful of PHP[4] backend helper functions, to allow users'

devices to connect to the backend while connected to the Internet.

Simple Object Access Protocol (SOAP):

I will have to create Java[5] classes with the Android™ SDK to implement some

type of secure connection to the backend for sending and receiving data.

User Authentication:

Once the backend PHP© helper functions are in place and I have the SOAP-

Java© classes I will test and implement user login with the backend. If the user

does not have an account with the backend, they will be asked if they would like

to create one and given a link to create an account.

Syncing device:

Once the device is online and the user is logged in I will compare the notes saved

to the device and the backend. If there is a file with the same name on both, with

different last modified dates, I will update whichever is out of date.

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[4] PHP is copyrighted © 2001 – 2011 to *The PHP Group*
[5] Java is copyrighted © 2011 to *ORACLE Inc.*

Tasks – *Paperwork*

Project Proposal:

Dr. Melody Stapleton approved this form on August 31, 2011. A copy can be viewed here: http://www.mattben.info/csci490/Project_Proposal.pdf

Project Plan:

This is the Project Plan and once approved by Dr. Melody Stapleton it will be viewable here: http://www.mattben.info/csci490/Project_Plan.pdf

Midterm Documentation:

I will be submitting an Entity Relationship Model (ERD) of the SQLite® database; A Unified Modeling Language (UML) diagram for the Java© classes used in thus far for the Android™ application; along with a Use Case Diagram with use case explanations.

Poster (draft form):

Dr. Melody Stapleton will review a prototype of the poster I will be presenting and a game plan for the poster presentation will be created.
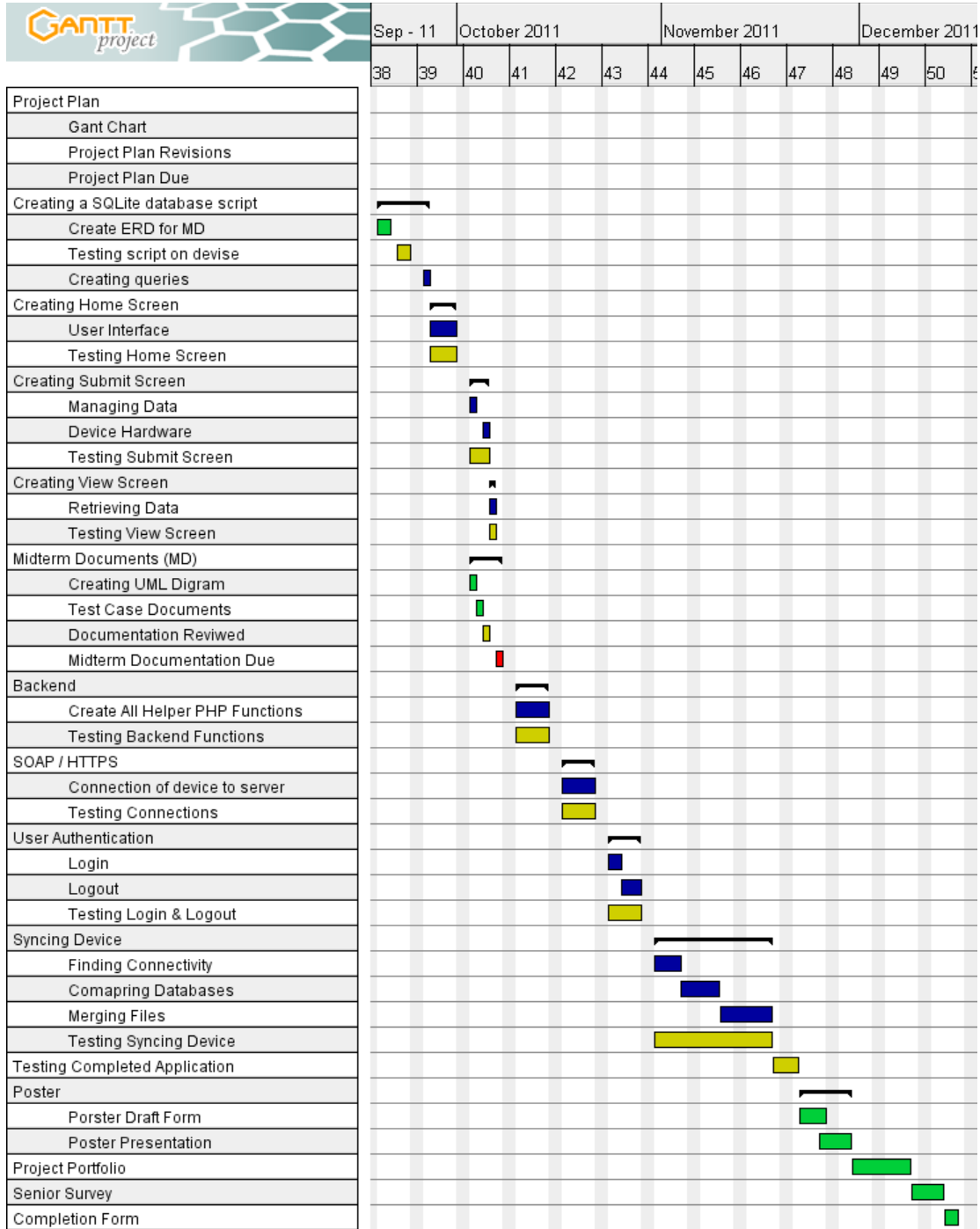
Poster:

I will present and explain my project to all faculty and students to the best of my ability, as is expected of me.

Project Completion Form:

The Project Completion Form will be submitted with my project portfolio, which will include all documentation listed before this.

Charts

(Documentation, Development, Testing, Due Dates)

	Sep - 11		October 2011				November 2011				December 2011		
	38	39	40	41	42	43	44	45	46	47	48	49	50
Project Plan													
Gant Chart													
Project Plan Revisions													
Project Plan Due													
Creating a SQLite database script													
Create ERD for MD													
Testing script on devise													
Creating queries													
Creating Home Screen													
User Interface													
Testing Home Screen													
Creating Submit Screen													
Managing Data													
Device Hardware													
Testing Submit Screen													
Creating View Screen													
Retrieving Data													
Testing View Screen													
Midterm Documents (MD)													
Creating UML Digram													
Test Case Documents													
Documentation Reviwed													
Midterm Documentation Due													
Backend													
Create All Helper PHP Functions													
Testing Backend Functions													
SOAP / HTTPS													
Connection of device to server													
Testing Connections													
User Authentication													
Login													
Logout													
Testing Login & Logout													
Syncing Device													
Finding Connectivity													
Comapring Databases													
Merging Files													
Testing Syncing Device													
Testing Completed Application													
Poster													
Porster Draft Form													
Poster Presentation													
Project Portfolio													
Senior Survey													
Completion Form													

Project Plan
Gantt Chart
Project Plan Revisions
Project Plan Due
Creating a SQLite database script
Create ERD for MD
Testing script on device
Creating queries
Creating Home Screen
User Interface
Testing Home Screen
Creating Submit Screen
Managing Data
Device Hardware
Testing Submit Screen
Creating View Screen
Retrieving Data
Testing View Screen
Midterm Documents (MD)
Creating UML Diagram
Test Case Documents
Documentation Reviewed
Midterm Documentation Due
Backend
Create All Helper PHP Functions
Testing Backend Functions
SOAP / HTTPS
Connection of device to server
Testing Connections
User Authentication
Login
Logout
Testing Login & Logout
Syncing Device
Finding Connectivity
Comparing Databases
Merging Files
Testing Syncing Device
Testing Completed Application
Poster
Printer Draft Form
Poster Presentation
Project Portfolio
Senior Survey
Completion Form

September 2011
19 20 21 22 23 24 25 26 27 28 29 30
October 2011
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
November 2011
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
December 2011
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Dependencies & Resources

Device:

I am dependent on the use of my Motorola[6] Droid[7] 3 since it will be used to show off my work at the poster presentation along with my final presentation.

Linode:

I am dependent on Linode[8] since my web server and backend are hosted there, as this is a service I pay for.

Daniel Phelps:

I am using Daniel Phelps' documentation as a resource to help structure my documentation.

Ben Carlsson

I am having Ben Carlsson proofread my documentation. He is a key resource to help ensure high quality in my project documentation.

getNote.org (noteZilla):

Thank you to Mike Wood, Jimmy Weir, and Kevin Kane, as the backend website http://www.getnote.org was started as a group project in our Web Development (CINS 465) class. The full documentation for our project can be viewed here: http://www.mattben.info/csci465/Milestone7.pdf. I adopted this project, then known as noteZilla, and made it my own, modifying the use of the site as well as moving and renaming it to getNote.org.

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[6] Motorola is copyrighted ©2011 to *Motorola Mobility Inc.*
[7] DROID is a registered trademark of *Lucasfilm Ltd*
[8] Linode is Copyrighted © 2003 – 2011 to *Linode LLC*

Risk Management & Mitigation Strategies

Learning Curve: • I am the only student teaching himself or herself the Android™ SDK this semester. There is not a faculty member with experience creating mobile applications using the Android™ SDK. I have a concern that I will not learn the Android™ SDK as fast I believe I will and that I will not have all the features completed in time.	• I will meet with Chris Morris, since he has experience with Apple[9] iOS[10] mobile development. • I will be starting development as soon as possible and have already started reading books on creating Android™ applications.
Resources: I am dependent on the use of my: • Computer • Dropbox[11] account • Motorola© Droid™ 3 device • Linode© server cluster	• I will have copies of my project and project files in many places. • I have a back up computer, which can be used as a fallback. • My wife and many friends have Android phones I could borrow in a bind. • I have daily backups of getNote.org. I could push the site to my local machine or the school server.
Writing Ability: • I am a weak writer and will have difficulty getting all the writing requirements done on time.	• I have to start all the writing requirement documents early so that I can have them reviewed. • Thank you to Ben Carlsson for all the proofreading and comments.
Self Control: • I get excited about my projects, and can tend to feature creep or get off task.	• I am going to keep in close contact with my advisor, Dr. Melody Stapleton, and adhere to this project plan.

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[9] Apple is Copyrighted © 2011 to *Apple Inc*.
[10] iOS (iPhone OS) is a registered trademark of *Apple Inc*.
[11] Dropbox is Copyrighted ©2011 to *Dropbox Inc*.

Methodology

Java© follows the object-oriented paradigm, and the same holds true when using the Android™ SDK. Android Mobile Development also follows the Model-View-Controller pattern. [5] This is an easy example of how MVC works:
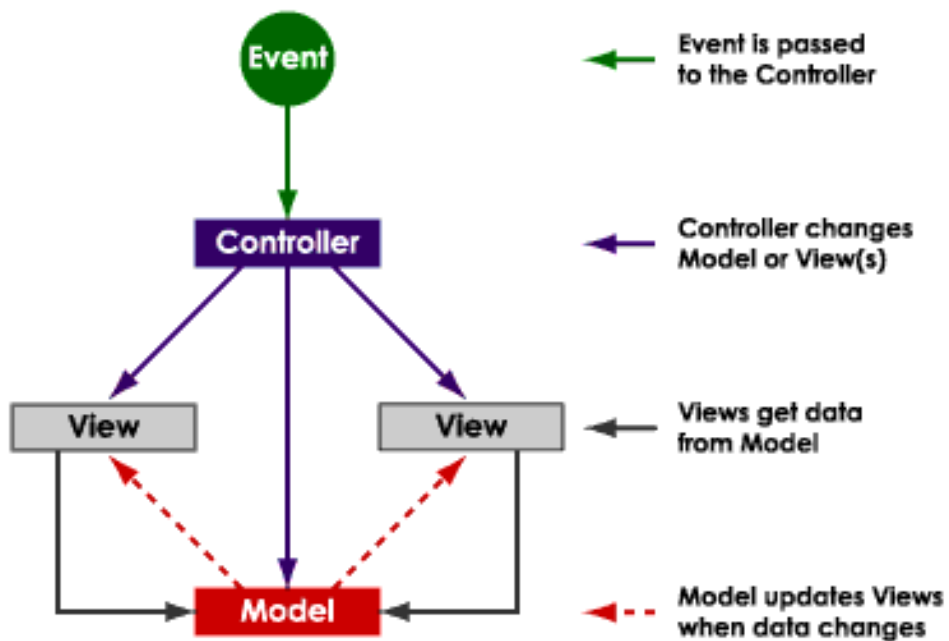

Figure 1.1

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I will be writing getNote the Android application in Java©, the primary language that implements the Android™ SDK. This development will be taking place in Eclipse[12], an Integrated Development Environment (IDE). I have chosen Eclipse© over other the other IDEs for the power and ease of Eclipse© and its auto completion. Eclipse© also has the most support for the Android™ SDK, which makes for easier testing and debugging. [6][7] I will be writing the backend helper functions in PHP© and, though there are many powerful and useful IDEs for creating PHP©, I am most comfortable using a simple text editor Notepad++[13]. I will be pushing these files to my web server using WinSCP[14]. I do all my web development testing in the web browser Mozilla[15] Firefox[16]. I will be making all changes to the backend MySQL® database using phpMyAdmin[17]. I will be keeping copies of all my files and project source code in my Dropbox© folder as well as locally and on my backend server.

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[12] Eclipse is Copyrighted ©2011 to *The Eclipse Foundation*
[13] Notepad++ is Copyrighted © 2011 to *Don Ho*
[14] WinSCP is free software which falls under the GNU General Public License
[15] Mozilla is copyrighted ©1998 – 2011 to *mozilla.org*
[16] Firefox is a registered trademark of *mozilla.org*
[17] phpMyAdmin is copyrighted ©2003 – 2011 to *phpMyAdmin devel team*

Development Approach:

I have read over a few approaches. I will be using a mix of things. The first and foremost approach will be Rapid Application Development (RAD) [1]. I feel this is a good approach for me since I'm new to Android™ and completing a small part and then testing and reviewing it, and then repeating this process I believe this will be a good way for me to keep the project under control. I will be using some of the features of Extreme Programming (EX) [3]; again, the rapidness of pushing and reviewing builds is a key. These all tie in to the Holy Grail of development paradigms: Agile Programming [2], the idea of breaking the project up into milestones (or builds) and then breaking these milestones into iterations (or features) [2]. I feel this kind of approach will lead me to a successful Android™ application come December.

Test Plan:

Since I will be using a rapid development approach [1] all my friends and I will be manually testing each feature as it is added. This will result in each build containing a new feature and bug / logic fixes from previous builds.

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.

References:

Fig 1.1   http://www.enode.com/x/markup/tutorial/mvc.html
            http://stackoverflow.com/questions/2925054/mvc-pattern-in-android

[1]   CASEMaker Totem; <u>What is Rapid Application Development?</u>
        Copyright © 1997-2000 by CASEMaker Inc.
        http://www.casemaker.com/download/products/totem/rad_wp.pdf

[2]   Pilone, Dan & Miles, Russ; <u>Head First Software Development</u>
        Copyright © 2008 by O'Reilly Media, Inc.

[3]   Beck, Kent; <u>eXtreme Programming eXplained</u>
        Copyright © 2000 by Addison Wesley Longman, Inc.

[4]   Kulak, Daryl & Guiney, Eamonn; <u>Use Cases Requirements in Context</u> 2nd Edition
        Copyright © 2004 by Pearson Education, Inc.

[5]   Stiller, Evelyn & LeBlanc, Cathie; <u>Project-Based Software Engineering</u>
        Copyright © 2002 by Addison-Wesley

[6]   Haseman, Chris; <u>Android Essentials</u> http://www.apress.com
        Copyright © 2008 by Chris Haseman

[7]   Murphy, L Mark; <u>Beginning Android</u> http://www.apress.com
        Copyright © 2009 Mark L Murphy

Web Sites Viewed:

{1}   http://www.android.com/

{2}   http://en.wikipedia.org/wiki/SOAP

{3}   http://stackoverflow.com/questions/tagged/android

{4}   http://www.enode.com/x/markup/tutorial/mvc.html

{5}   http://www.sqlite.org/

{6}   http://www.mysql.com/

{7}   http://www.php.net/

{8}   http://www.eclipse.org/

{9}   http://www.dropbox.com/

{10}   http://www.apress.com

{11}   http://www.linux.com