Virtual Shackles Comic Viewer
Ver: 1.7 BETA

Mat Cash

Week 10 Report

December 7, 2010

Project Concept Proposal

The project proposed is an iPhone application that will read the comic strips from the Virtual Shackles site. Because web comics are popular; using our application we can provide the comic to the user on the go. The goal of the project is to create an application where there currently is not one available. An Application that will be popular to the viewers of the web comic and bring in more downloads and potentially more profit. Internet users who use the site: Virtual Shackles to read their web comic would be the audience. It would allow the user to view the day's comic on their iPhone. The application will go to the site and display the comic of the day. It will offer the newest and the previous comics on the site. Xkcd has an application similar to the one described. It has a good list feature for all the comics on their site. The Cyanide and Happiness application views the comic by using touch gestures. However, it is a slow application. This application idea is not uncommon. It is the first for this particular site however. For this project, the following sources will be used:

- o Fahmie, Mike. "Virtual Shackles". <http://www.virtualshackles.com/>.

- o Jobs, Steve. iPhoneSDK, Xcode. Apple

- o Jobs, Steve. "Mac osX Reference library: Objective-C". Apple. <http://developer.apple.com/mac/library/documentation/Cocoa/Conceptual/ObjectiveC/Introduction/introObjectiveC.html>.

- o Weber, Michael. "Objective-C: Links, Resources, Stuff". <http://www.foldr.org/~michaelw/objective-c/>.

- o Pilone, Dan & Tracey. "Head First iPhone Development"

- o Mark, Dave & LaMarche, Jeff. "Beginning iPhone Development: Exploring the iPhone SDKs"

Coding using the iPhone SDK and with objective-c is an expected challenge. Having the application go to a website and find the web comic is another challenge we plan to face. Here is an outline of how we plan to develop the application:

- Creating the interface for the application.

- Have the application talk to the internet.

- Display only the web comic from the site.

If time is allowed we might add an updating list of all the comics. The option to download a comic to the camera reel would be another such option.

It's all about me!

No really, you might want to skip this.

_____

Mat Cash – Lead Designer, Software Developer, Master and Creator (of this app)
time served: 2 day, 2 hours.

Mat "Cash" arrived at Berea College in 2007 with the intent of majoring in Technology, until he saw what the Computer Science major had to offer. In 2010 he studied Shinto and Buddhism in Japan, hence the minor in Asian Studies. His two favorite pieces of technology are his PS3 and his iPhone. His hobby other than his gaming is the internet. There is a wealth of information out there all waiting to be read!

Future Application Developers

After writing that terrible about me section I thought I would give you the gift of my knowledge to make up for it. When I started this project, I didn't have anything you might think a traditional developer would have. I didn't have any resource material, and most importantly, I didn't have a mac or xcode. If you are really intent on developing something like an iPhone application but don't have the recourses necessary, read on.

Problem #1 – "I don't have a MAC?!"

If you don't have upwards of two grand to drop on a laptop (who does!?) then you need find another way to get your hands of the Mac Operating System. Of course I am not going to go into detail about how to get your hands on the OS.. but one way or another you have to have a copy. After that, you have two possible options.

A) – Build a hackintosh
   A hackintosh is the term used to describe a machine that is not a mac running the mac os (Either as a dual boot or stand alone). http://www.hackintosh.com/ and http://www.osx86project.org/ Offer great support for turning your machine into one. A couple limitations that I am aware of – It has to have an intel processor (All macs past 10.4 have used on intel.) If Im not mistaken and you look hard enough you can find kexts (www.kexts.com/ "drivers") for your machine. If you get really stuck and happen to work at IS&S then you have the advantage of asking around, some students and the

supervisors may mention some experience in this area. (This may no longer be true as times change.)

B) – Build a VM
A VM is a Virtual Machine, an image on your harddrive that acts as an OS when used with VM related software (http://www.vmware.com/ http://www.virtualbox.org/)Until recently I had thought that this method was unreliable. But I was proven wrong by another student who used a VM running OS X 10.6.5 for his project. The disk image and a VM program is all need with this method, but you may run into other issues that I am not aware of. Support may not be as useful in this area as it is for a hackintosh.

Problem #2 – "I need xcode?"

Xcode is of course the program used to write code for whatever obj c related. This wonderful software can be downloaded from apple if you register as a developer.
NOTE: Registering as a Dev is free, the 100$ is to publish apps on the app store. That is up to you.

Problem #3 – "How does all this work?"

Well, provided you got this far, I'd say you're in it for the long haul now. So I am going to skip over all the code stuff right now and jump to the application on the phone part. If you are writing an app for the phone and not mac then you need to do a couple things to get that app on your phone.

1) – Jailbreak your iDevice
That is all I am going to say about that though I have heard this guy does wonders for that. Once you get broken, add the hackulos repo from cydia and download the App Sync package.

2) – Code signing
Code Signing Guide: Procedures – This has to be done on your mac to proceed.

3) –The Magic
iPhone – Follow this guide to create a special script in xcode to make your app passable to itunes. After that you are set you write all your iPhone applications!

Problem #4 –"OK! I got it all working! … Now what?"

Now is the Fun part! You make your application! What? You say you need help? Well that's just silly, who uses books?

In all seriousness, I 'acquired' a few books that didn't do much to help me. That could be different depending on what you do however. The books I found most useful were(in order):

1. Beginning iPhone Development: Exploring the iPhone SDK
   - Dave Mark and Jeff LaMarche

2. Learning iPhone Programming (O'Reilly)
   - Alasdair Allen

3. Head First iPhone Development (O'Reilly)
   - Dan Pilone and Tracey Pilone

That being said, the most useful resource I had was the internet. Google is your best friend. 9 times out of 10 if you are having a problem, someone the internet has had it and someone else has solved it.

Good Luck, I had some very tough times with xcode and writing my application. But I also had a lot fun doing it to. If you found that this was really helpful be sure to let me and/or Jan know. (william.m.cash@gmail.com)

Inspiration

There are no applications for this site, and Virtual Shackles is one of the better ones in my opinion. An application would be something others like me would be interested it. I personally would benefit by learning a new language. As well as expanding my knowledge with the Mac software and with the iPhone SDK.

Vision and Scope

The Purpose of this project is to allow all the followers of Virtual Shackles the option to view the web comic on their i-Device. This will change comic view for all the followers of the comic. No longer will they be shackled to their computers to read the comic, with this app all they will need is the internet and the comic will be in the palm of their hand.

The major features of this application include displaying the comics from the website. The app would have a first and last button, which would load the first comic and the most recent comic. Next and previous buttons that display the comic before or after the current one would also be included. The screen would also rotate and include the ability to zoom in on the picture. Features that we do not plan on including at this time would be a separate back button that goes to a list of all the comics to choose one. Another feature would be to create a searchable index of the list previously described.

Preliminary Software Requirements Specifications

F-001
App opens without crashing
Evaluation Method: opening the app
Dependency: iOS
Priority: High
Requirement revision history: None

F-002
Displays web comic from virtual shackles
Evaluation Method: Opening the app
Dependency: iOS
Priority: High
Requirement revision history: None

F-003
First, previous, next, last buttons work
Evaluation Method: Push the buttons
Dependency: App Opens
Priority: Moderate
Requirement revision history: None

F-004
Zooming in and out
Evaluation Method: Zoom gesture (In and Out)
Dependency: Comic displays
Priority: Low
Requirement revision history: (9/20 added out gesture)

F-005
Screen Rotates when the device is turned.
Evaluation Method: Turn the device in three ways.
Dependency: Comic displays
Priority: If time permits
Requirement revision history: (10/25 added only three orientations)

F-006
Random button for browsing
Evaluation Method: Push the button.
Dependency: Comic displays
Priority: If time permits
Requirement revision history: None

F-007
Save Feature
Evaluation Method: Close and Reopen App.
Dependency: Buttons work
Priority: If time permits
Requirement revision history: None

N-001
Mac OSX 10.6.2 Software
Evaluation Method: iPhone SDK Runs
Dependency: Intel Processor
Priority: Essential
Requirement revision history: None

N-002
iPhone SDK 4.1
Evaluation Method: It runs.
Dependency: OSX 10.6.2
Priority: Essential
Requirement revision history: None

System Design and Architecture

Once the application is completed it will present the user with an image of the latest web comic from Virtual Shackles. It will also, on a tap, present the user with options to move to the next, previous, first or last web comic.

Software Components:

VSAppDelegate(.h/.m) – declares the window and navigation controllers
for the application to use. (10/18 – Changed name)

VSWebViewController(.h/.m) – a controller class for the main view of the application, this controls what is displayed and the first screen the user views, contains navigation information so the user can navigate through the comics. Also controls the buttons and the labels for the WebView.xib (10/18 – Changed name and content)
WebView.xib – this file controls the window where the comics and buttons will be displayed. It is separate from the previously mentioned MainView.xib. The interface is built in the WebView, therefore it has been changed to reflect this. (10/18 – Changed to WebView.xib)

When program is loaded:

This is the first step the application loads, the VShacklesAppDelegate loads the WebView Window of the application which calls the VSWebController. This controller then uses the built in regular expressions to parse the web page for the title and the .jpg for the comic, then displays it in the web view. It also stores the information for when a button is pressed and what each button does when pressed.

When the User selects a button in the WebView Window it hits a function in the ViewController that will load a new comic into the WebView Window.

The VShacklesViewController will also control the screen orientation and zoom in and zoom out gestures through functions.

(10/18 Changed information regarding how the application loads)

Implementation

- README.txt – text file briefly explaining the developer how to install the program.(10/4)

- VirtualShacklesAppDelegate.h – Sets up the parameters for the view used in the appdelegate.m (10/4)

- VirtualShacklesAppDelegate.m – Uses the class and interface in the .h file to create the web view for the application. (10/18)

- VSWebViewController.h – creates the interface to be called in the Controller.m file. It creates the handle for the web portion of the application. (10/4)

- VSWebViewController.m – Calls the .h file for the use of the web view, talks to the internet to get the proper data, and handles the orientation and button features. (10/18)

Known Bugs and Other Issues:

VirtualShackles 1.0:

- App is known to crash in simulator. (Fixed)

- App is slow to load on Edge network (not app issue)

VirtualShackles 1.5:

- Issue with buttons not displaying from the previous newest comic to the newest comic. (Fixed)

Preliminary Test Plan and Preliminary Test Cases

When tested, the Virtual Shackles application will launch on the iPhoneOS. The interface will be quick to load, the buttons and the title bar. Provided it is running on a smooth network the title and number of comic will be displayed at the top in the title bar, and then the comic will load.

Beta Test 01 – B01

- Description: The first test will be to open the application and make sure that it opens properly without crashing and everything being displayed

- Precondition: The application should be installed on the phone in such a way that it will run when opened and that the buttons load their respective comics

- Steps:
    a. Install the application using iTunes
    b. Run the installed application
    c. Use the buttons to browse through the comics

- Result: The application will present to the user an interface with which they can navigate the comics from the site

Beta Test 02 – B02

- Description: This test will ensure that the zoom and rotating features are working for the application

- Precondition: The application is open and is able to talk to the internet

- Steps:
    a. Install the application with iTunes
    b. Run the application on iPhone
    c. While the application is open, use the zoom gesture
    d. While the application is open, change the orientation of the phone

- Result: The Application should zoom in on the image and the screen should change orientation appropriately

Beta Test 03 – B03

- Description: This test will ensure that the buttons are working for the application.

- Precondition: The application is open and is able to talk to the internet

- Steps:
    a. Install the application with iTunes
    b. Run the application on iPhone
    c. While the application is open, use the buttons

Result: The Application should take the input from the user and respond with the appropriate action.

To: Dr. Jan Pearce, Project Director
From: Mat Cash
Subject: Virtual Shackles
Date: September 6, 2010

This week we nailed down the project ideas and finalized the project proposal. We installed the 10.6 operating system and installed the iPhone SDK. We also interacted with the SDK. Installing the Operating System took about 3 hours, installing the SDK took one. Finalizing the Project ideas, creating the report took about an hour, and we spent half an hour interacting with the SDK. Total time this week was five and a half hours. The challenges in the future include studying objective-C and to being coding on the project.

To: Dr. Jan Pearce, Project Director
From: Mat Cash
Subject: Virtual Shackles
Date: September 13, 2010

This week we narrowed down the scope of the project and made a list of the Software requirements. The challenges we faced this week were setting the proper scope and finalizing all of the features that we decided would make the app, leaving the other ones unless time permits. We spent an hour looking at other application to see which features stood out most for them, and another hour and a half to write up the report and to create the software requirements list. Goals for next week include more planning as well as looking to more examples of objective c.

To: Dr. Jan Pearce, Project Director
From: Mat Cash
Subject: Virtual Shackles
Date: September 20, 2010

Accomplishments: Besides the goal of taking a in depth look at the scope, changed a couple of the SRS. I also looked forward a bit at what the app will look like design wise when we get to that state. I also started reading more documentation on Objective-C material.

Challenges: Thinking about the scope, if it needed more material or changes. It got easier as I looked more towards the design as I could potential challenges that the interface might make.

Time Spent This Week: Spent about 2 and a half hours this week. I spent one hour reading source material for iPhone applications. The other hour I was looking at the scope of the project and if any changes needed to be made. And with the last half I started working on a rough layout of the design, adding screens and what I imagine it to look and work like.

   Time Spent Overall: 8 ½ hours total spent on this project / 2 ½ this week.

Goals: Next week include taking my current design and ironing it out and getting it on paper. Also plan to get some more hands on experience with the SDK.

To: Dr. Jan Pearce, Project Director
From: Mat Cash
Subject: Virtual Shackles
Date: September 27, 2010

Accomplishments: After thinking through the architecture of the application, I decided to move forward and design the applications main window in xcode. I laid out the main screen and the buttons that will be called to navigate through the comics.

Challenges: Thinking about how the application will be designed without much prior experience to go on in the app design proved a bit of a challenge.

Time Spent This Week: Spent about an hour working out the architecture of the application. I spent a couple hours working with the design and reading source material.

   Time Spent overall: 10 ½ hours total spent on this project / 2 this week.

Goals: Will be work with xcode and get hopefully get the application to talk to the internet.

To: Dr. Jan Pearce, Project Director
From: Mat Cash
Subject: Virtual Shackles
Date: October 4, 2010

Accomplishments: Began working on the implantation of the application. Got farther than expected in some areas. The orientation is done, the buttons and the comic turn when the phone is shifted. Communication with the internet was also established, the application will now load the first web comic from the site.

Challenges: Finding a way to navigate the site/using the buttons for the comics. I need to think of a way to have the application move through the web server to gather the comics or pull the image from the first page and call the links to navigate the comic.

Time Spent This Week: Spent 4 hours working on the implementation of the code. That includes both reading and writing the code, testing the application, and putting the current version on my phone.

   Time Spent overall: 14 ½ hours total spent on this project / 4 this week.

Goals: Finding a way to navigate through the web comics, either through the web server where the comics are stored. Or from the site, calling the links and pulling the image only into the application.

To: Dr. Jan Pearce, Project Director
From: Mat Cash
Subject: Virtual Shackles
Date: October 18, 2010

Accomplishments: Made it possible for the application to parse data from a web page. In this case it gets the html code for the jpg and the title for the comic and is able to display both when the app starts.

Challenges: Trying to parse the links out of the web page for the buttons and creating the buttons. Other problems may be properly using the buttons to navigate through the comics.

Time Spent This Week: Spend a great deal of two days working on this project. Spent the majority of the time recorded trying things that would not work and starting over from a backup. The other quarter of the time was very productive, spent on ironing out the parsing code and fixing other minor issues.

   Time Spent overall: 31 ½ hours total spent on this project / 17 this week.

Goals: Getting the buttons to function as the links on the web page and parse the new image given.

To: Dr. Jan Pearce, Project Director
From: Mat Cash
Subject: Virtual Shackles Ver. 1.0
Date: October 25, 2010

Accomplishments: Created the actions for when the buttons are pressed. The First, Last, Previous, and Next buttons all work. I also reworked the view of the buttons to match the buttons on the site. The data string is now a global variable that anything can call within its function.

Challenges: working out how to parse the data from the page and know which page I was one so I could easily modify the link next time the button is pressed.

Time Spent This Week: Spend the time week working on the buttons. Reworked the view of the buttons and using regular expressions created the actions for the buttons when they are pressed.

   Time Spent overall: 34 ½ hours total spent on this project / 3 this week.

Goals: Making the buttons invisible or different when there is not a newer or earlier comic to click on (like once the first or last comic is pressed). I also want a working random button for the app.

To: Dr. Jan Pearce, Project Director
From: Mat Cash
Subject: Virtual Shackles Ver. 1.5 BETA
Date: November 1, 2010

Accomplishments: Bug fixes. Fixed an issue where parsing the title of a web page if the page had an " ' " character in it, it would be displayed as " ' " (similar issues were had with quotes as well). Another issue when the user was at the newest comic, the newest and next buttons would still be displayed. This hurt simplicity of the app and was fixed. Also added a number to the top right of the app to keep track which number comic you were on.

Challenges: Fixing the issue with apostrophes took a bit of work, but once it was figured out it was simple enough. One other challenge was trying to create a function in xcode, which is something that is still a problem.

Time Spent This Week: Spend the time this week working on clean up. Fixing some bugs and other small details.

   Time Spent overall: 37 ½ hours total spent on this project / 3 this week.

Goals: Getting a working function to simplify the code.

To: Dr. Jan Pearce, Project Director
From: Mat Cash
Subject: Virtual Shackles Ver. 1.6 BETA
Date: November 15, 2010

Accomplishments: This week was more bug fixes. That and I was also able to simplify the code with the use of a function. There is now function to call every time the application is to load a comic. It reduced the VSWebViewController.m file to just 200 hundred lines instead of 400.

Challenges: Finding bugs that may or may not exist can be quite challenging.

Time Spent This Week: Spend the time this week working on finding and fixing bugs, as well as simplifying the code using functions and other means.

   Time Spent overall: 39 hours total spent on this project / 1 ½ this week.

Goals: Testing on other devices. Getting an iPad and recording the demo on it.

To: Dr. Jan Pearce, Project Director
From: Mat Cash
Subject: Virtual Shackles Ver. 1.7 BETA
Date: November 22, 2010

Accomplishments: This week we spent more work on ascetics than anything else. I changed the title bar color and added a bar to navigation panel. I modified the color schemes to be a closer match than the previous blue bars. I also found a sort of way to zoom the initial image when it's loaded. This makes the image fit better to the window than before. I also recorded, edited and published the video demo. Found here: http://www.youtube.com/watch?v=tmOwHjKxi4o

Challenges: Recoding the video and minor fixes to the views.

Time Spent This Week: Spend the time this week working on mostly the video demo, a little time was spent working on the changing some of the visual details of the app.

Time Spent overall: 43 hours total spent on this project / 4 this week.

Goals: Testing on other devices. Video editing.

To: Dr. Jan Pearce, Project Director
From: Mat Cash
Subject: Virtual Shackles Ver. 1.7 BETA
Date: November 29, 2010

Accomplishments: This week I edited some of the text from the video demo. Found here: http://www.youtube.com/watch?v=tmOwHjKxi4o . I also worked out a design for the poster, and evaluated my fellow students on their own projects.

Challenges: Evaluating Others.

Time Spent This Week: Spend the time this week working on mostly evaluating. Some time on the video, and on the project poster.

   Time Spent overall: 45 hours total spent on this project / 2 this week.

Goals: Testing on other devices. Developing a guide for future application development.

To: Dr. Jan Pearce, Project Director
From: Mat Cash
Subject: Virtual Shackles Ver. 1.7 BETA
Date: December 6, 2010

Accomplishments: Redesigned the poster. Then I finalized the entire poster. Finished what was left of the guide for new comers to the objective-c world. I looked over the code one more time as well as the read me and everything else. Then I proceeded mentally prepared myself for the presentation. Also note that I changed the official name of the project (Virtual Shackles Comic Viewer or "VS Viewer" for the app name.)

Challenges: The design of the poster was tricky to get it to work just the way I wanted it to.

Time Spent This Week: Spend the time this week working on the setup section of future coders. The majority of the time was spent on the poster.

   Time Spent overall: 50 hours total spent on this project / 5 this week.

Goals: Doing a great job at the presentation tomorrow.