

Sample Test Plan for the Design Thinking Mobile Application

Goldilocks & The Three Squares

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For our Client: Helen Liang

Summary of Product(s) to be tested.

The Design Thinking Mobile Application is intended to assist those who want to solve a problem by designing and prototyping a viable solution for it.

The application is to guide the user through the Design Thinking Process, step-by-step. The major elements of the product are voice and video recording capabilities for user interviews; a toolbox to suggest brainstorming tools; a timer to keep each session brief and intuitive; a camera to take photos of sketches, prototypes and ; and a linear interface to help the user realize a solution from start to finish.

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Resources Required for testing

Our project is a phone application, currently being tested in Android. Hardware resources include our personal computers for compiling and emulation, along with Android smart phones and tablets for testing on mobile devices. Software include emulators and application exporters. The team is currently using Genymotion, a mobile device emulator which runs through virtual environment software VirtualBox. We are also using Adobe Phonegap Build to export our application. The software pulls our Phonegap application off github, and then allows us to download the application directly to our mobile devices via QR

code scanning. All resources will be provided by each individual members of the team. Testing and debugging could take up to a total of about 10 hours.

Packaging, Building, Configuration and Option.

GitHub/BitBucket Repo

The GitHub repo is private, so only those with access to it can view it. The URL to test the app is <https://github.com/atai92/DesignThinking/> . You can obtain a copy by pulling from this branch. You can also click the button to clone the file onto your desktop or to obtain a zip file. Because we are using phonegap, we must use software to build it into an android app. If you would like to test and run the app on the android device, you can do it using the Adobe PhoneGap online builder at PhoneGap.com. However, we are currently unclear whether there is a difference in the app's presentation when using the online builder versus the Cordova CLI builder. Both options are presented.

To use the online phonegap builder, first you must signup and create an account with Phonegap at https://build.phonegap.com/people/sign_up . Connect your gitHub account. There will then be an option to pull from a .git repo or upload a .zip file. Be sure you click on the "private" tab and not the "open-source" tab. Type in the the Design Thinking gitHub app url: <https://github.com/atai92/DesignThinking/> and click "pull from .git repo". This will generate a QR code that you can scan with your android device to install the application.

If you want to test the app on an emulator, make changes to the app, or want to build without the PhoneGap website builder, you can do the following:

In order to build and test a phonegap application, you must download a few software.

First, we need to install the Cordova Command Line tool (CLI). Follow these steps:

- 1) Download and install Node.js at <http://nodejs.org/>
- 2) Download and install a git client at <http://git-scm.com/>
- 3) Download and install cordova through the command line:

OS X and Linux:

```
$ sudo npm install -g cordova
```

Windows:

```
C:\>npm install -g cordova
```

In order to work in the Android environment, you need other resources including:

- 1) Android SDK at <http://developer.android.com/sdk/index.html>
 - a) Follow further instructions on the site to obtain sdk tools
- 2) Java jdk at

<http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

- 3) Ant Builder at <http://ant.apache.org/>

Append to your path the following:

- 1) The place where you installed the SDK:

a) For OS X:

```
export
```

```
PATH=${PATH}:/Development/adt-bundle/sdk/platform-tools:/Development/adt-bundle/sdk/tools
```

b) For Windows:

```
;C:\Development\adt-bundle\sdk\platform-tools;C:\Development\adt-bundle\sdk\tools
```

2) The place where you installed jdk and sdk:

```
;%JAVA_HOME%\bin;%ANT_HOME%\bin
```

%JAVA_HOME% is your jdk folder path, and %ANT_HOME% is your ant folder path

We can push our app onto an android device or onto an emulator. We use the Genymotion emulator: <https://www.genymotion.com/> . Follow the instructions on the site to download and install Genymotion, and to configure a virtual device.

Once you have everything set up, use the command line to go into the design thinking app folder. In this root folder, build the project using the command:

```
cordova build
```

If you are using the Genymotion emulator, be sure that it is turned on and ready. If you are using your device, be sure it is connected to the computer. Then run:

```
cordova run android
```

If you are using a different emulator, you may need to run

```
cordova emulate android
```

Process for defect reporting & repair.

The team uses GitHub and its issue tracker for the majority of testing. The developers will also function as the testing team, so the issue listings and commit keyword on github will be useful in tracking bugs and reporting issues per commit.

Approved changes are pushed to the master branch. Each individual team member will pull from the master and push to their respective branches until changes are tested and approved via inter team communication. Communication among developers will be through Facebook Messenger, and communication with clients will be through WeChat messaging system and Skype.

Functional Testing Plan.

User Identification	User Goal	Test Id	Estimated Time (Devs)	Estimated Time (Testers)
General User	Learn About Design Thinking	1		

General User	Start New Project	2		
General User	Open Existing Project	3		
General User	Record an Interview	4		
General User	Document Results	5		
General User	Define a Problem	6		
General User	Brainstorm an Idea	7		
General User	Build a Prototype	8		
General User	Test a Prototype	9		
General User	Review the Design Thinking Process Summary	10		

Non-Functional Testing Plan.

Category	Sub-Category	Specific Goal	Use Case Index	Estimated Time (Devs)	Estimated Time (Testers)
Platform Dependency	Android	Screen Size Compatibility, Camera Functionality, Proper Data Storage			
	IOS	Screen Size Compatibility,			

		Camera Functionality, Proper Data Storage			
Usability	Intuitive Flow of Application	User Response Time per Step			
Performance	Load Time	Essentially Instantaneous Screen Transitions.			

List of test cases.

Test Case 1

1. General User
2. Learn About Design Thinking
3. No initial conditions
4. Test Script:
 - a. User opens application from phone.
 - b. Start screen appears.
 - c. User selects *What is Design Thinking* text on start screen.
 - d. *What is Design Thinking* screen appears.
 - e. User selects *Please Explain.* button on screen.
 - i. User is taken to a tutorial about the Design Thinking Process.
 - ii. User selects *Next* and *Previous* buttons to navigate through the steps.
 - iii. User selects *Done* button.
 - iv. Start screen appears.
 - f. User selects *Never Mind.* text on screen or back button.
 - i. Start screen appears.

Test Case 2

1. General User
2. Start New Project
3. No initial conditions
4. Test Script:
 - a. User opens application from phone.
 - b. Start screen appears.
 - c. User selects *Start New Project* button from start screen.
 - d. Pop-up box appears, prompting user to enter a project name.
 - e. User enters project name.
 - f. User presses *Start* button to begin Design Thinking Process.

Test Case 3

1. General User
2. Open Existing Project
3. Test Case 3
4. Test Script:
 - a. User opens application from phone.
 - b. Start screen appears.
 - c. User selects *Open Project* button from start screen.
 - d. If there are existing projects:
 - i. Pop-up menu appears, showing a list of existing project names.
 - ii. User selects desired project.
 - iii. Screen shows where the user left off in the Design Thinking Process.
 - e. If there are no existing projects:
 - i. Pop-up box appears, informing user that there are no existing projects.

Test Case 4

1. General User
2. Record an Interview
3. Test Case 3
4. Test Script:
 - a. User is at an Interview step of the Design Thinking Process.
 - b. User selects *View Questions* from Interview screen.
 - i. Interview Questions screen appears.
 - ii. User views possible interview questions for his/her client.
 - iii. User may add questions to the list or delete questions in the list.
 - iv. User touches back button.
 - v. Interview screen appears.
 - c. User records the interview.
 - i. User selects *Video Record* from Interview screen.
 1. Video recording screen appears.
 2. User selects *View Questions*.
 3. Repeat step (b), but return to video recording screen after step (iv).
 4. User touches *Record* button.
 - a. Recording ensues.
 5. User touches *Pause* button.
 - a. Recording pauses.
 6. User touches *Record* button.
 - a. Recording resumes.
 7. Time's Up screen appears when time has run out.
 - ii. User selects *Voice*.
 1. Voice recording screen appears.

2. User selects *View Questions*.
3. Repeat step (b), but return to voice recording screen after step (iv).
4. User touches *Record* button.
5. User touches *Record* button.
6. Recording ensues.
7. User touches *Pause* button.
8. Recording pauses.
9. User touches *Record* button.
10. Recording resumes.
11. Time's Up screen appears when time has run out.

Test Case 5

1. General User
2. Document Results
3. Test Case 3, 4
4. Test Script:
 - a. User documents results from interview or other ideation or building process.
 - i. User selects *Take Picture*.
 1. User takes pictures of notes from interview.
 2. User returns to previous screen.
 - ii. User selects *Write Note*.
 1. User types notes from interview.
 2. User returns to previous screen.
 - b. User selects *Next* to move on.
 - c. Toolbox screen appears.
 - d. User selects *View* on a tool.
 - i. Tutorial for chosen tool appears.
 - ii. User selects *Next* and *Previous* buttons to navigate through the steps.
 - iii. User selects *Done* button.
 - iv. Toolbox screen appears.
 - e. User selects *Use* on a tool.
 - i. Countdown from 3 appears on screen.
 - ii. Timer screen appears. Timer begins.
 - iii. User selects *Pause* button.
 1. Timer pauses.
 - iv. User selects *Start* button.
 1. Timer resumes.
 - v. User selects *Restart* button.
 1. Timer restarts.

Test Case 6

1. General User

2. Define a Problem
3. Test Case 3, 4, 5
4. Test Script:
 - a. User is at Define step of the Design Thinking Process.
 - b. User selects *Start* button.
 - c. Identify The Problem screen appears.
 - d. User reads instructions on screen.
 - e. User selects *I'm Ready* button.
 - f. Countdown from 3 appears on screen.
 - g. Define form appears on screen. Timer begins.
 - h. User fills in necessary next in attempt to establish the client's problem.
 - i. Time's Up screen appears when time has run out.
 - j. User selects *Next* button.
 - k. Problem statement appears on screen as user has inputted.

Test Case 7

1. General User
2. Brainstorm an Idea
3. Test Case 3, 4, 5, 6
4. Test Script:
 - a. User is at Ideate step of the Design Thinking Process.
 - b. User selects *Start* button.
 - c. Problem statement appears on screen as user has inputted.
 - d. User selects *Next* button.
 - e. Sketch screen appears.
 - f. User reads instructions.
 - g. User selects *I'm Ready* button.
 - h. Countdown from 3 appears on screen.
 - i. Problem statement appears on screen. Timer begins.
 - j. User selects *Pause* button.
 - i. Timer pauses.
 - k. User selects *Start* button.
 - i. Timer resumes.
 - l. User selects *Restart* button.
 - i. Timer restarts.
 - m. Time's Up screen appears.
 - n. User selects *Next* button.
 - o. Initial Feedback screen appears.
 - p. Repeat Test Case 4.
 - q. Repeat Test Case 5.

Test Case 8

1. General User

2. Build a Prototype
3. Test Case 3, 4, 5, 6, 7
4. Test Script:
 - a. User is at Build step of the Design Thinking Process.
 - b. User selects *I'm Ready* button.
 - c. Repeat Test Case 5.

Test Case 9

1. General User
2. Test a Prototype
3. Test Case 3, 4, 5, 6, 7, 8
4. Test Script:
 - a. User is at Test step of the Design Thinking Process.
 - b. User selects *Start* button.
 - c. Repeat Test Case 4.
 - d. Repeat Test Case 5.

Test Case 10

1. General User
2. Review the Design Thinking Process Summary
3. Test Case 3, 4, 5, 6, 7, 8, 9
4. Test Script:
 - a. User is at Summary screen.
 - b. User selects *View Summary* button.
 - c. Slideshow or video of process is shown on the screen.