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Project Plan Document

Shelly Welch, Fall 2013
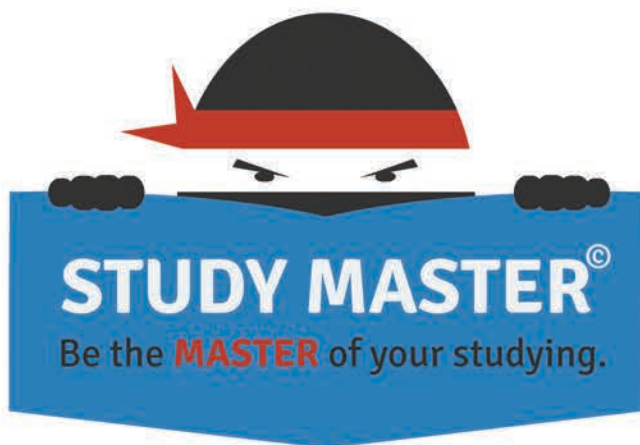
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WEB REFERENCE

GENERAL REFERENCE & RESEARCH SITES

Central Intelligence Agency:
www.odci.gov/cia/publications/factbook
Central Intelligence Agency (CIA) worldwide factbook containing in-depth data for over 200 countries around the globe.

CNN Student News: www.cnnfyi.com
U.S. and World news multimedia site tailored to the needs of students.

Conversion Tables: www.convert-me.com
Convert length, area, speed, temperature, etc., into different units and systems.

eLibrary Research: www.elibrary.com
Search any topic using a database of current newspapers, magazines, books and more.

Encyclopedia Britannica: www.britannica.com
Online version of one of the world's most trusted sources of information on every topic imaginable.

Fact Monster: www.factmonster.com
Designed for kids of all ages, this site offers an amazing array of facts and figures in addition to homework help, an almanac, dictionary and much more.

Gallup Organization: www.gallup.com
Search thousands of poll results, special reports, societal trends and social audits.

Hoovers Business Research: www.hoovers.com
Comprehensive index of over 45,000 leading U.S. private and public companies.

Information Please Almanac: www.infoplease.com
Online almanac offering millions of interesting and useful facts on a wide variety of subjects.

Internet Public Library: www.ipl.org
An exhaustive collection of over 20,000 titles.

iTools Research: www.itools.com
Collection of online research tools including dictionaries, translations, quotations and more.

Library of Congress: www.loc.gov
Easy to use reference catalog for accessing the collections of the Library of Congress.

National Archives: www.archives.gov
National Archives online directory of U.S. Federal records.

Smithsonian Institution: www.si.edu
User-friendly site from the world's largest museum complex and research organization.

U.S. Census Bureau: www.census.gov
A wealth of basic information about the U.S., broken down on a national, state and local level.

U.S. Department of Labor: http://stats.bls.gov
Bureau of Labor statistics site containing current labor statistics and links to hundreds of state and Federal agencies.

U.S. Federal Government: www.fedstats.gov
Statistical information from over 100 federal agencies.

Project Plan Document

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Table of Contents

1   Introduction

The intent of this document is to provide a development project plan for a purposed mobile application with a primary focus on improving the educational user experience. This project's Central Operating Premise is to create an educational-based mobile application that supports a positive learning environment through the use of social and gamification mobile features. The scope of this document describes what this application seeks to accomplish and offer as well as a purposed implementation plan. This document also provides:

- Project Overview,
- Project Description,
- Project Resources,
- Schedule / Development Model,
- Budget Estimate,
- Ownership Model,
- Legal Requirements,
- Cultural Considerations, and
- Suggested Marketing Strategies.

1.1   Literature Review & Market Research

The mobile application purposed seeks to utilize social and gamification features in order to support a positive learning environment. This section will provide a brief literature review of previous research related to the purposed mobile application as well as a market research overview, which outlines project need, challenges, opportunities and potential competition.

1.1.1   Need

Several studies conducted by the *Pew Research Center's Internet & American Life Project* have shown an increase in mobile technology use among teachers and teens both inside and outside the classroom, supporting the benefit of digital technologies such as the purposed mobile application. One such study, published in 2013, found "73% of [Advanced Placement] and [National Writing Project] teachers say that they and/or their students use their mobile phones in the classroom or to complete assignments" (Purcell, Heaps, Buchanan, & Friedrich, 2013, p. 2). In addition, "75% of 12-17 year-olds now own cell phones, up from 45% in 2004", and those percentages will most likely increase as the popularity of mobile technologies for personal and educational use continue to rise (Lenhart, Campbell, Ling, & Purcell, 2010, p. 2). The primary users for the purposed mobile application is expanded to include both high school (age 12-17) and college (age 18-24) students in order to find the largest population of students that both own and use a mobile device for educational purposes. Research supports this by showing 82% of all young adults and 94-99% of young adults that are students own a cell phone (Smith, Rainie, & Zickuhr, 2011).

If we combine *Pew Research Center's* research (Lenhart et al., 2010; Purcell et al., 2013; Smith et al., 2011) with statistics gathered by the U.S. Department of Education ("Back to School Statistics for 2013," 2013), as visualized in Figure 1, the purposed mobile application could reach over approximately 11.1 million students and 3.1 million teachers as potential users from U.S. public high schools alone. Statistics also show 21.8 million students are expected to enroll in U.S. colleges and universities in Fall 2013, with almost all of them being potential users of the purposed mobile application. Combined with the parents and teachers who may also find the purposed mobile

application beneficial, this could lead to over 36 million users that continue to use the application throughout their academic careers.

Number of Potential Users(in Millions)
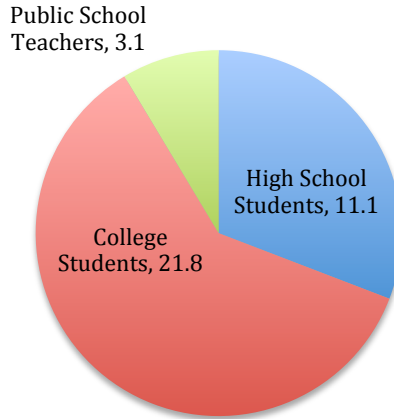
Type of User	Number of Users
High School Students	11.1 Million
College Students	21.8 Million
Public School Teachers	3.1 Million
Total Number of Potential Users	**36 Million**

Figure 1. Chart & table of potential mobile application users based on research (Lenhart et al., 2010; Purcell et al., 2013; Smith et al., 2011) and statistical data ("Back to School Statistics for 2013," 2013); numbers are approximate in relation to the purposed mobile application and are depicted in millions.

Additionally, the task and time management functionalities purposed are supported by academic research as well. The National Center for Learning Disabilities recommends developing a time management system to assist the learning process. Some suggestions they offer include: rewarding yourself, developing a routine, staying organized, keeping all your study-related content (i.e. syllabi, assignments, etc.) where they won't get lost, and managing the right balance of work, academic and/or social activities ("How Teens Can Build Better Time Management and Study Skills,"). Furthermore, the Pomodoro Technique, developed by Francesco Cirillo utilizing previous academic research and time management techniques, seeks to ease anxiety, enhance effectiveness and facilitate learning (Cirillo, 2006, p. 4). The method recommends focusing on a task for 25 minutes using a timer then taking a short break. All of these time management suggestions are incorporated in varying levels throughout the purposed mobile application.

Research by Fan (2011) studied social influences on school motivation among high school students and gender-based differences on the impact of those influences on motivation. It was observed that a "teacher-student relationship characterized by warmth and support increases students' self-perceived confidence and learning" (p. 171) by exerting influence on the intrinsic values that students placed on the subjects of math and English. It was also observed that the students' peers' value of learning was positively linked to student self-efficacy and utility value (i.e. the perception of how useful studying is to complete their goals) placed on math and English. When applying this research to the purposed mobile application, the suggested social functions would

potentially increase user study times and foster a positive relationship between peers' academic value and motivation.

An article by Cohen (2011), suggests that "curiosity, imagination, and a sense of play—three aspects integral to learning—are largely missing from the traditional textbook-and test based education system" and points out that all these are present in games like MMORPGs (p. 16). Thus, not only would a gamified educational system promote positive learning environments allowing for trial-and-error, the additional social features could also "encourage exploration, collaboration, and the exchange of ideas while removing unwanted pressures that can interfere with students' abilities" (Cohen 2011, p.17). Additional research by Dominguez et al. (2013) also suggests that gamification in learning can "increase student motivation [and] can have a great emotional and social impact" (p.391).

1.1.2   Challenges

When looking to research conducted by the *Pew Research Center's Internet & American Life Project*, "71% of teachers managing student use of cell phones and other digital tools in class is an issue" (Purcell et al., 2013, p. 40). Furthermore, "a majority of teens (62%) say that they can have a cell phone at school but not in class, and another quarter of teens (24%) attend schools that forbid cell phones altogether" (Lenhart et al., 2010, p. 81). Thus, purposing a mobile application such as this one could be problematic to overall adoption among teens where cell phones are considered distracting or outright forbidden. Even so, "77% [of teens] take their phones with them to school every school day" (Lenhart et al., 2010, p. 82), so finding a solution that is beneficial to student learning and motivation while at school would be worthwhile. In order to offer a solution to this challenge, several additional features purposed in this mobile application may help minimize these distractions and aid teachers in managing cell phone use in their classrooms. This technique combined with gamification features should both benefit learning and motivation.

Furthermore, many teachers express concern about the incorporation of technologies in the classroom "without discernible, demonstrable added value to the learning process" and feel that these technologies should only be used in such settings "as long as they enhance the lesson plan and encourage learning" (Purcell et al., 2013, p. 49). Even so, the same study found that many teachers "*enjoy* incorporating [new technologies] into their classrooms" and rank time constraints as the top challenge for incorporating them into the educational process (Purcell et al., 2013, p. 49). Similarly, there are some obstacles inherent in mobile applications similar to the one purposed here. Specifically, in the research study by Dominguez et al. (2013), quantitative analysis suggests that the "cognitive impact of gamification over students is not very significant", and leads us to the conclusion that such systems may not be better than traditional systems on a student's score or academic ability (p. 391). Their solution is to "make them more interesting for students" (p. 391), however, since the purposed mobile application focus more on task management than cognitive aspects of educative content, these implications may be less relevant. Therefore, the largest challenge for the purposed mobile application may be merely ensuring ease of use and promoting good study habits.

In the article by Cohen (2011), a drawback to gamification systems is that "addiction to game play is engineered into the games themselves" (p. 17). They purpose a solution of integrating breaks into the system, like avatars that ask the user to take a break. Such a system could be modified for the purposed mobile application, and should be addressed as mobile features are created and modified. The author also offers the disadvantage of educational-based games being inherently less

appealing than other more popular entertainment-based games. This should hopefully be overcome in the purposed mobile application with a skillful combination of utility, functionality, entertainment, and positive social interaction. In addition, the gamification features may be inherently easy to "cheat", allowing students to log study hours and gain points without actually studying. Ideally, positive aspects of the purposed mobile application's gamification features combined with administrator features will aid in reducing these potential challenges inherent in systems like this one.

Additional legal and security issues may arise as technical aspects of the purposed mobile application are developed. Since the features would include social functions such as visualizing other users' data, care should be taken when developing the technical aspects of such features that involve a user's private or personal information.

1.1.3   Opportunities

By implementing the project, some opportunities may become available. For example:
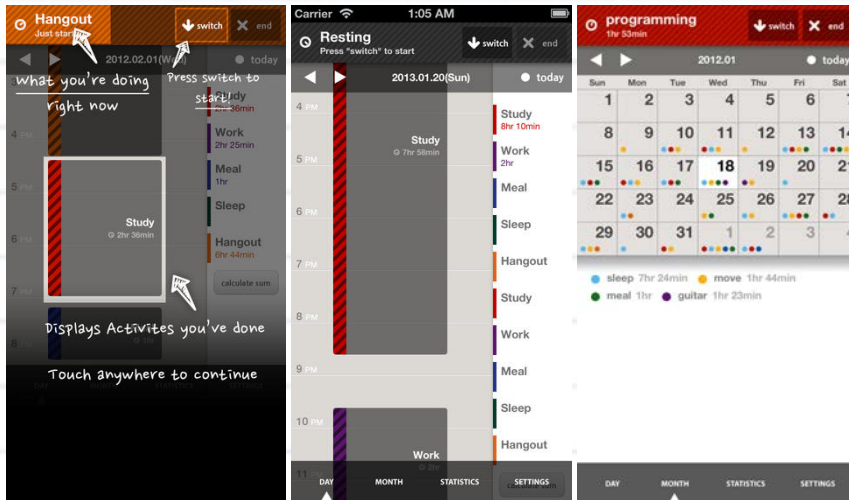- The purposed mobile application involves a unique combination of features (i.e. gamification, social, e-learning), which may encourage government funding, awards, and/or implementation in educational systems allowing for increased revenue;
- Additional features may allow for deployment to additional consumers (i.e. teachers, parents, etc.), which could increase the use and benefit in education and improve sales overall;
- Opportunities for upgrades and improvements to mobile features (i.e. professional training, studying for standardized tests, etc.) may allow for a broader range of customers and improved sales.

1.1.4   Competition

The following section describes some similar mobile applications (current as of December 2013) in terms of functionality and the primary goal the application seeks to fulfill. The largest competitors to the purposed application are "Study Blue", "Epic Win", the mobile applications developed by gWhiz, LLC (i.e. PrepZilla and meStudying), and MyStudyRewards. However, none of these competitors duplicate the purposed mobile applications functionality and content exactly.

1.1.4.1   StudyMate: The Ultimate Time Management by JoonNyung Heo

Description: This application's goal is to help the user manage their time more efficiently. It basically provides an optimized calendar with the ability to log activities as your doing them, and provides "necessary statistics" and color-coded calendar functions "to make sure you spend your time as efficiently as possible."

Website: https://itunes.apple.com/us/app/studymate-ultimate-time-management/id493919160?mt=8

1.1.4.2 StudyBlue Inc.

Description: This mobile application's goal is "to help you make the most of your study time, when and where ever you need them." While the purposed mobile application's primary feature is recording study hours, the StudyBlue mobile application utilizes gamification and social features to aid their primary educational-based goal. Similarly purposed features seen in the StudyBlue application include the visualization of "Score", "Class Stats" and "Collaborate" features.

Figure 2. "StudyBlue" Mobile Application: "Score" (left), "Class Stats" (middle), and "Collaborate" (right) features.

Website: http://www.studyblue.com

1.1.4.3 Epic Win

Description: This application seeks to "put the adventure back into your life. It's a streamlined to-do list, to note down all your everyday tasks, but with a role-playing spin." It uses gamification features (i.e. points and rewards) to make an ordinary to-do list more entertaining and motivating.

Figure 3. "EpicWin" Mobile Application: Task management functionality with gamification features.

Website: http://www.rexbox.co.uk/epicwin/index.html

1.1.4.4   Duolingo

Description: This application also uses gamification features, but in an educational context. This application promotes to potential users that they can "have fun while you learn." Duolingo features badges, achievements, and a leaderboard to motivate its users to learn a new language. It also features both mobile and desktop functionality.
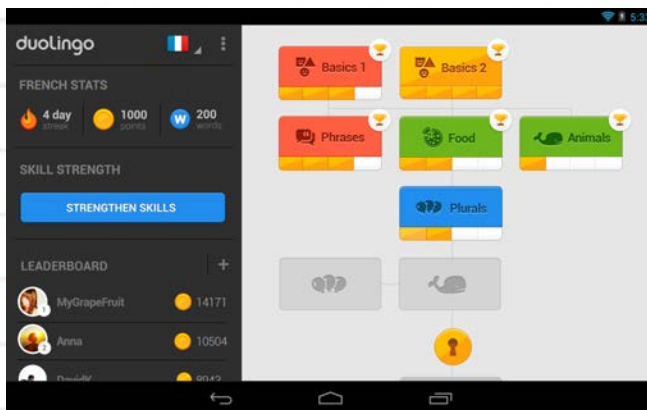
Figure 4. "Duolingo" Mobile Application: Educational language learning application with gamification features.

Website: http://www.duolingo.com/

1.1.4.5   StudyTimer by Yapp

Description: This mobile application's goal is to help users manage their study time better. This application aids in doing this by providing different modes and features. While this application lacks the social and gamification features offered in the purposed mobile application, the study timer features are similar in functionality.
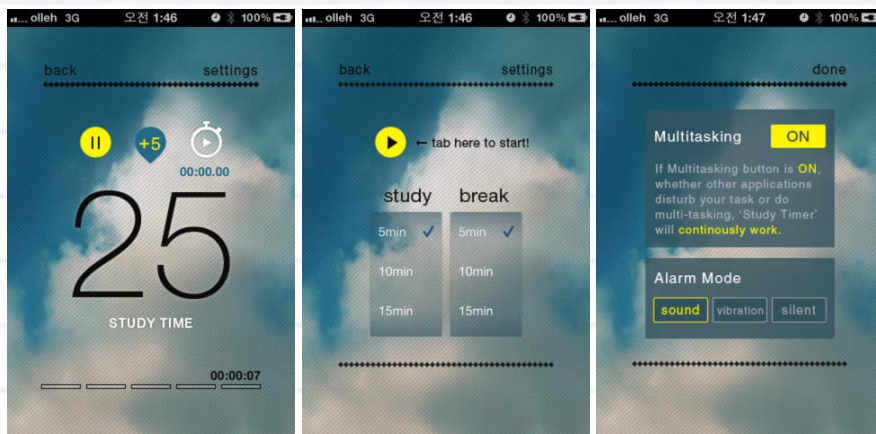
Figure 5. "StudyTimer" Mobile Application by Yapp: Timer Features.

Website: https://itunes.apple.com/us/app/studytimer/id435302082?mt=8

1.1.4.6   iHomework by Paul Pilone

Description: This mobile application's goal is "to improve your life as a student, so you can focus on what you do best. Quickly enter homework assignments, course and teacher information, important tasks, and reading in a fun, intuitive, and convenient way." Basically, this application is a virtual student agenda that syncs between platforms (i.e. mobile phones, tablets, desktop computers, etc.), allowing users to record deadlines, tasks, teacher/classmate contact information and other academic related content. While most of these features are not purposed in this mobile application, the overall goal is similar and most of the popular educational-based mobile applications in iTunes seem to be similar in functionality.
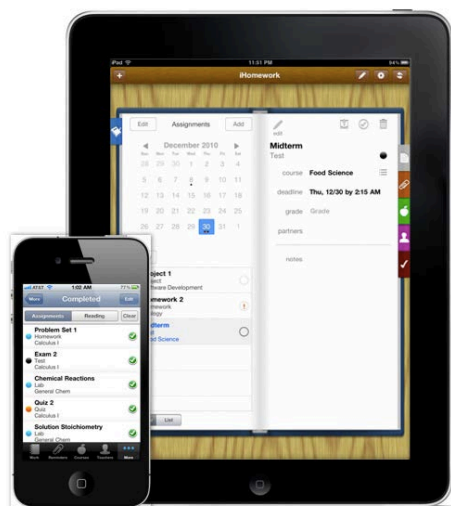
Figure 6. "iHomework" Mobile Application by Paul Pilone: Cross platform application with educational-based features.

Website: http://ihomework.element84.com

1.1.4.7   HoursTracker

Description: This application's primary goal is to aid in tracking work hours and earnings. This example is similar to the "iHomework" application in that the similarity to the purposed mobile application is primarily functional, but it also lacks an educational focus.

Figure 7. "HoursTracker" Mobile Application: Hours & earnings tracking aid.

Website: http://www.hourstrackerapp.com

1.1.4.8   inClass Inc.

Description: This mobile application is similar to "StudyBlue" and "iHomework" in that its goal is educational based. It also seems to be a fairly popular educational application, having been a featured application in iTunes in both 2011 and 2012. Functionally, this application is similar to "iHomework" by allowing users to create tasks, take notes, and also includes some audio recording and social sharing functions. While it lacks the type of visual "gamification" features that "StudyBlue" has, it also has the ability to share content and seeks to aid the user's academic goals.

Figure 8. "inClass" Mobile Application: Cross platform application with educational-based features.

Website: http://www.inclassapp.com

1.1.4.9 iStudiez by iStudies Team

Description: This mobile application is another popular educational-based application, having been featured on iTunes in 2009-2011, that is basically a virtual student planner like the "iHomework" mobile application. This application seeks to aid in managing coursework, and is directed towards both students and parents. While functionally this application has features that are not offered in the purposed mobile application, its broad user population (i.e. students & teachers) and multiple language functionality are features that may be optimal for the purposed application.

Figure 9. iStudiez Mobile Application: Cross platform application with educational-based features.

Website: http://istudentpro.com

1.1.4.10 PrepZilla by gWhiz, LLC

Description: As described in the application's description in iTunes, this educational-based mobile application "turns exam prep into a game." This application does so by offering a point-based gamification system combined with sponsored educational content "from top educational publishers including McGraw-Hill, Florida Virtual School (FLVS), CCI, and Barron's". They also incorporate social interaction by offering both a "self-study mode" and group play option. While this application is very similar to the purposed mobile application in its gamification of education content, core functionalities and user-interface (UI) design differ. The details regarding both UI design and functionality of the purpose mobile application will be described in in later sections of this document.
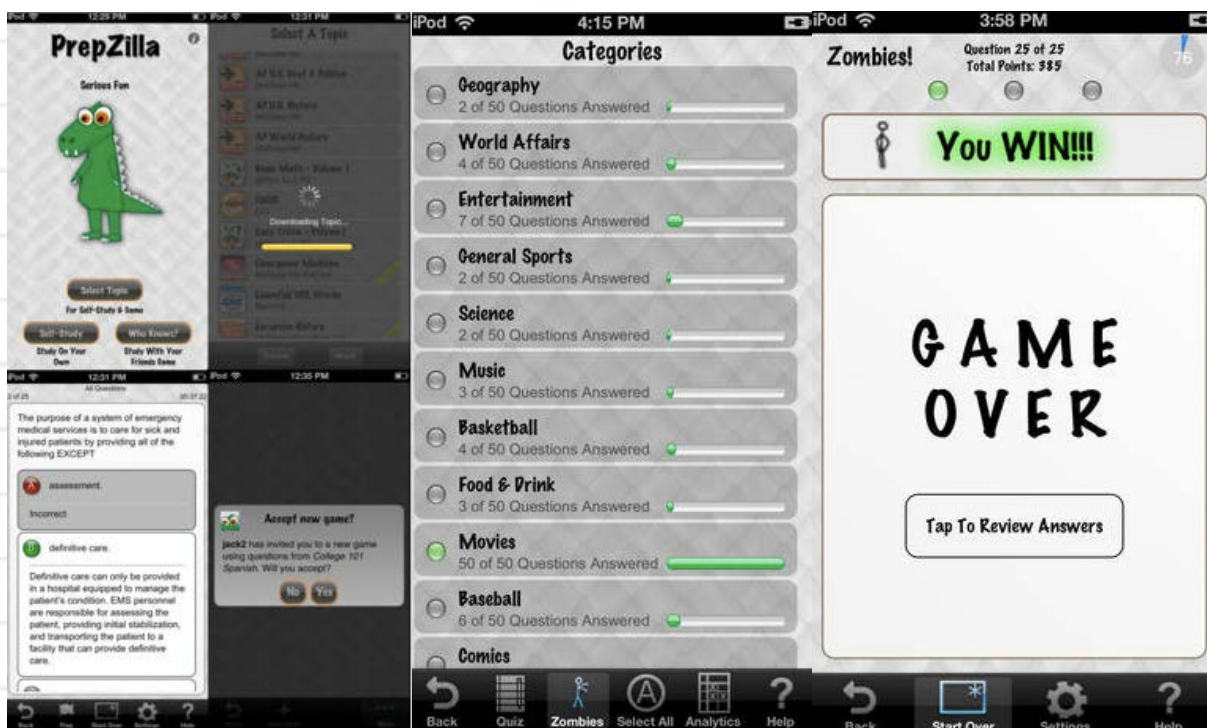
Figure 10. PrepZilla Mobile Application: A social test prep game.

Website: http://www.gwhizmobile.com

1.1.4.11 meStudying by gWhiz, LLC

Description: This educational-based mobile application was created in conjunction with Florida Virtual School (FVS) and includes access to a library of Advanced Placement (AP) studying materials. The application offers self-study and group study options, very similar to "PrepZilla", but lacks the more advanced gamification features offered in the purposed mobile application and in other applications, like "PrepZilla" or "Epic Win".

Figure 11. meStudying Mobile Application: Educational content with a multiplayer game feature.

Website: http://www.gwhizmobile.com

1.1.4.12 MyStudyRewards

Description: This mobile application incorporates both gamification and social features in an educational-based context. "My Study Rewards" uses a sponsor-based rewards system along with in-app videos, books and quizzes for which users can earn points. Social features include competing against friends and a leaderboard along with login and contacts populated by an associated Facebook or Google+ account. Unlike the purposed mobile application, "My Study Rewards" offers learning content restricted to specific videos and books and has a limited range of gamification features.
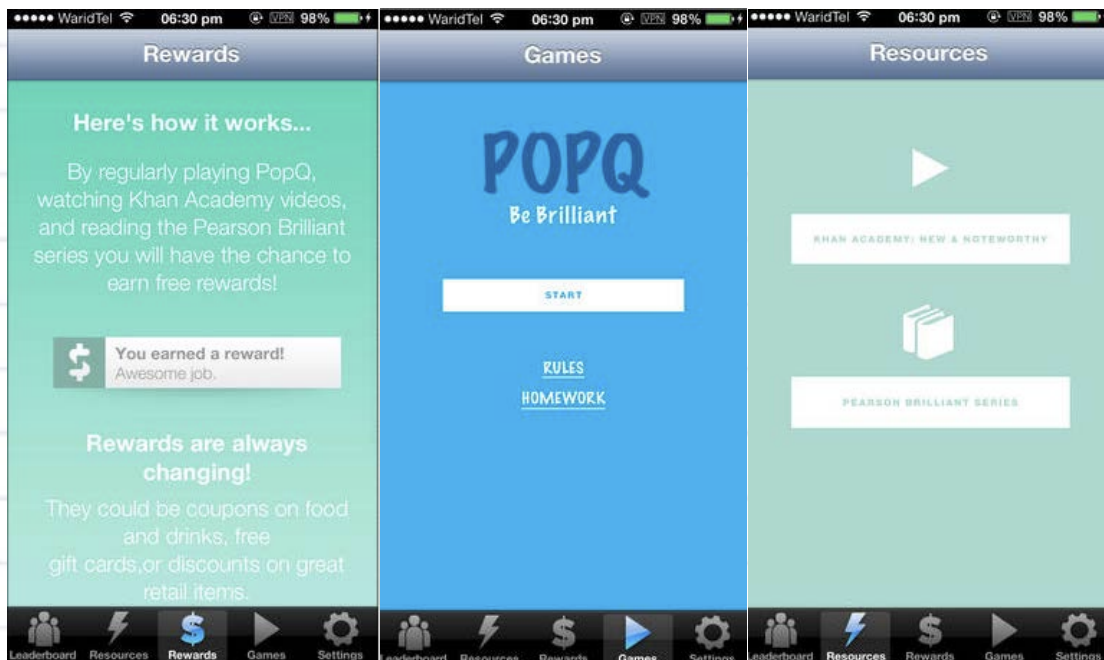
Figure 12. MyStudyRewards Mobile Application: An educational content with social features and sponsored rewards.

Website: http://www.mystudyrewards.com

1.2   Vision, Mission & Principles

This project is developed with the following vision, mission and principles as a basis for project development and should continue to be the primary focus as the project continues into future development phases. These include:

- **Vision:** Create a mobile application that improves the user experience and supports education through improved study habits;
- **Mission:** Promote a positive relationship between students' academic value and motivation to study through the use of gamificiation features, like leveling, leaderboards and achievements or badges;
- **Principles:** Support a positive learning environment for students by aiding motivation and task management through educational, social and entertainment based mobile features.

2   Project Overview

As described in the Introduction, development of the purposed mobile application will be developed with a primary focus on improving the educational user experience. The following section outlines the Central Operating Premise, Project Goals, Stakeholders, and describes a sample use case scenario for the purposed mobile application.

2.1   Central Operating Premise

This project's Central Operating Premise (COP) is to create an educational-based mobile application that supports a positive studying environment for students through the use of task management, social and gamification mobile features.

2.2   Project Goals

This project will create a mobile application with the following:

- Mobile functions based on academic research,
- Quantitative and task management features (examples *may* include a study timer, log of hours studied, access to a database of other students' study hours, etc.)
- Gamification features (examples include but are not limited to: visual representations of hours studied, badges, leveling, leaderboard, etc.),
- Social features (examples include but are not limited to: viewing other students' study hours, sharing on social media, etc.).

2.3   Stakeholders

Successful implementation of the work described in this document will benefit a number of stakeholders including students, teachers and parents by allowing for an enhanced studying experience through the use of mobile application features.

This mobile application would target users who are students of any age, but ideally high school through college. These age ranges would be of "high" importance due to the likelihood that they would already own a mobile device and/or have consistent access. Further information regarding users was also outlined in Literature Review & Market Research.

Table 1 outlines the potential stakeholders for the outlined project, including what project aspects may be of interest and their relative importance.

Table 1. List of stakeholders and their associated role, interest/stake, and importance.

Stakeholder	Role	Interest / Stake	Importance
College Students	User	Tracking study hours, social functions, mobile access.	High
High School Students (Grades 9-12)	User	Tracking study hours, gamification features, social functions, mobile access.	High
Middle School Students (Grades 7-8)	User	Tracking study hours, gamification features, social functions.	Medium
Elementary School Students (Grades K-6)	User	Tracking study hours, gamification features.	Low
Educators (i.e. teachers, professors, etc.)	User & Client	Access to database of study hours, social functions; Guidance on deployment and marketing of mobile services.	Medium
Parents & Relatives	User	Access to database of study hours, social functions.	Medium
Academic Researchers	User	Access to database of study hours.	Low
Educational Administrators	User & Client	Access to database of study hours; Guidance on deployment and marketing of mobile services.	Low
Apple Developer Programs	Client	Development and deployment of mobile application.	High
Educational Institutions (i.e. Higher Ed, K-12, etc.)	Client	Guidance on deployment and marketing of mobile services.	High
Design/Innovation Studio	Client	Potential Funder & Potential Primary Stakeholder.	High
Educational Companies (i.e. McGraw Hill Education)	Client	Potential Funder and Sponsor.	High

2.4   Use Case Scenario

The following use case scenario (Table 2) explains how the purposed mobile application will work from a user's point-of-view. Additional use case scenarios may be added as needed during the development and deployment process.

Table 2. Use Case Scenario for a student studying for class.

Title:	Study for Class
Description:	Student accesses the mobile application and selects a course to study for, then sets the timer to begin studying.
Primary Actor:	Student
Pre-conditions:	Student is logged into system.
Post-conditions:	Study time is then recorded and displayed.
Main Success Scenario:	1. Student selects "Classes" from the menu 2. System displays available courses (i.e. "History", "Art", "Science", etc.). 3. Student selects one course to study for. 4. Student selects the duration of study time (i.e. default time set for 25 minutes with 5 minute break/cool-down). 5. Student selects the "Begin" or "Play" button. 6. Application starts the study timer for the allotted duration and displays a message when the timer has finished. 7. Study time is recorded and displayed.
Extensions:	2a. A preferred course is unavailable. --2a1. An optional field is available allowing for the course to be added manually. 3a. Student wants to study for more than one course in one study session. --3a1. Selection of multiple courses is unavailable and an error message is displayed providing a brief explanation. 6a. Student wants to end the study session before the timer has finished. --6a1. A pause button is available, allowing the student to restart the timer when they are ready. --6a2. A cancel button is available, allowing the user to stop the session before it is completed. Prompts would be displayed allowing for the session to be recorded using the incomplete time, or for the session to be deleted. 7a. Study time is not recorded. --7a1. An error message is displayed providing a brief explanation. 7b. Study time is recorded but not displayed. --7b1. An error message is displayed providing a brief explanation. 7c. Student wants to compare study times with other students. --7c1. Options are available within the application allowing for additional features to be displayed.
Frequency of Use:	Daily during the academic year.

3   Project Description

The purposed application would aid students by providing mobile features that aid in task management and increase positive academic value and motivation. Figure 13 shows potential functionality provided by the purposed mobile application.
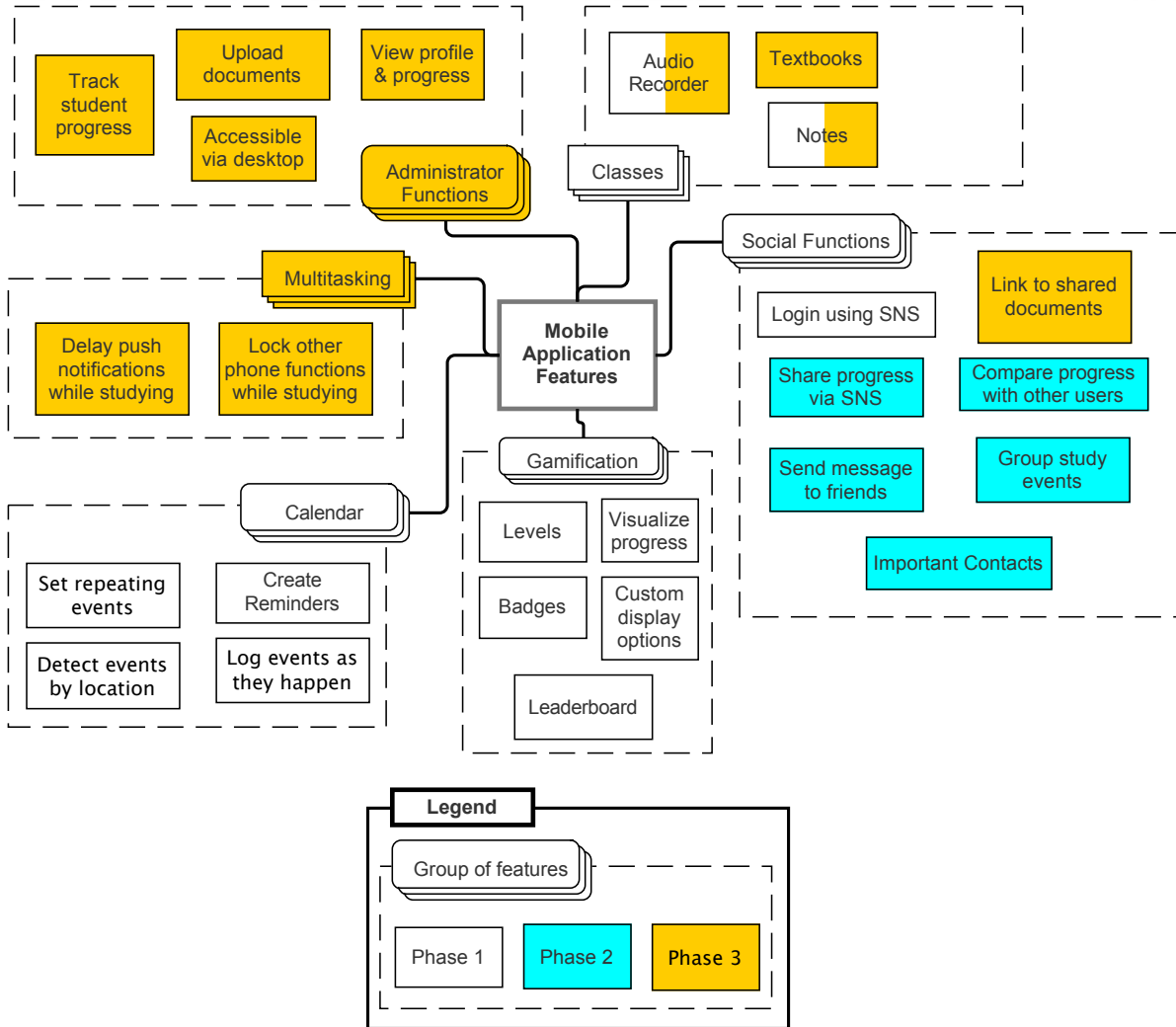
Figure 13. Potential mobile features present in the purposed mobile application.

3.1 Application Features

The following features, as seen in Table 3, will be available in the purposed mobile application, although some may be deployed in different phases.

Table 3. Application features and their associated description and benefit; features may be deployed in varying phases.

Application Feature	Phase	Description	Benefit
Calendar	1	Push through built-in calendar,	Important
	1	Log events as they happen (i.e. "current" & "past" events),	Important
	1	Set repeating events (i.e. "Class every Tuesday at 6pm"),	Important
	1	Detect events by location (i.e. attend class by detecting GPS location, Wi-Fi, etc.).	Useful
	1	Create reminders & push notifications (i.e. "Remember to study", "Test on Friday", etc.)	Important
Gamification	1	Badges for completing achievements (i.e. number of hours studying, take an exam, etc.),	Important
	1	Leaderboard (i.e. Top 5 in Class),	Useful
	1	Levels (i.e. based on academic calendar.),	Useful
	1	Visualize progress (i.e. number study hours, profile info, etc.),	Critical
	1	Custom display options - Change the units displayed (i.e. hours to minutes), colors spectrum used, time frame displayed (i.e. week, month, semester).	Important
Social Functions	1	Login using Social Networking System (SNS) like Facebook with options to adjust login settings,	Critical
	2	Share progress (i.e. gamification features, visualized progress),	Useful
	2	Share study events with friends & link to calendar functions,	Useful
	2	Import contacts from phonebook (i.e. teachers, classmates, etc.),	Useful
	2	Compare progress with other users (i.e. teachers, classmates, group members, etc.),	Useful
	3	Share and collaborate on documents	Useful
Classes	1	Jot down reminders & notes while studying with **local storage**,	Useful
	3	Jot down reminders & notes while studying with **cloud storage**,	Useful
	1	Audio recorder with **local storage** (i.e. audio memos, record lectures, etc.),	Useful
	3	Audio recorder with **cloud storage** (i.e. saves space locally & provides ability to share with other users),	Useful
	1	Option to log hours and categorize other application specific content by subject (i.e. general subject recommendations, custom entry, populated by SNS and/or registered school, etc.),	Useful
	3	Access textbook documents (i.e. quizzes, study guides, website info, etc.) & recommend class subjects.	Useful

Administrator Functions	3	Accessible via desktop computer and/or website,	Useful
	3	Upload and sync documents (i.e. Dropbox, Google Drive, local computer hard drive, etc.),	Useful
	3	View visualized progress and profile information (via other platforms),	Useful
	3	Track progress (i.e. allow parents to access student progress, push notifications, adjust multitasking functions, etc.).	Useful
Multitasking	3	Allow access to phone settings,	Useful
	3	Delay push notifications (i.e. Phone on vibrate/silent, no notifications while studying, etc.),	Useful
	3	Lock phone features - Prevent "multitasking" while studying (i.e. using other applications or phone functions until specified time has passed).	Useful

3.2   Application Design

The following section describes how the purposed application user interface (UI) and user experience (UX) will be designed. A sitemap is also provided displaying the purposed user navigation (Figure 14) and functionality specifications are described regarding how the purposed application will be created.
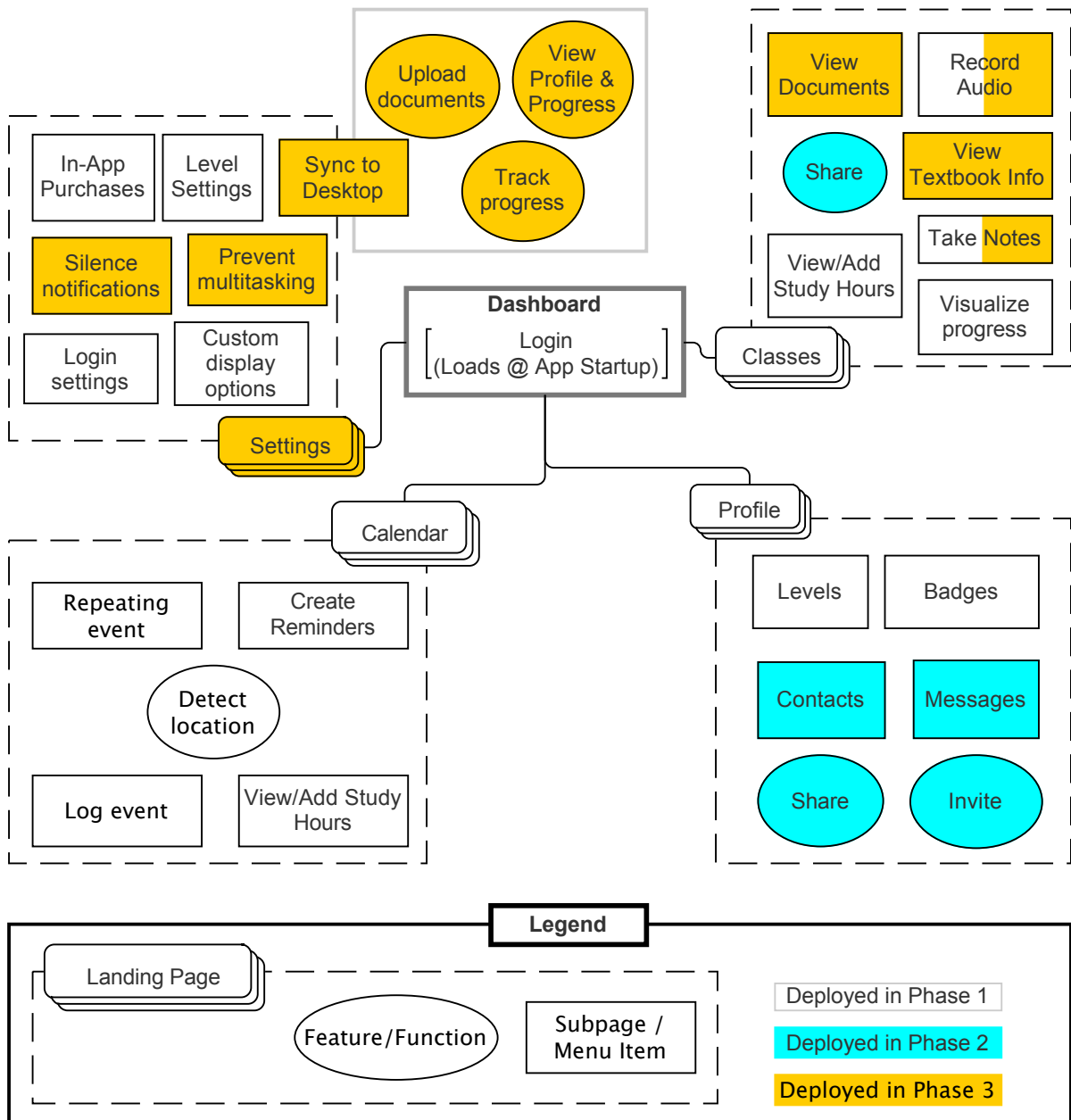
3.2.1   Sitemap

Figure 14. Sitemap including deployment phases.

3.2.2   User Interface (UI) Design

User Interface (UI) Design & Pitchbook

Details regarding user interface (UI), user experience (UX), and navigation are outlined in the "User Interface (UI) Design" section of the "Pitchbook" document. Please note, all featured designs are drafts and may be subject to change as development continues; additional designs may be added where needed. In summary the "User Interface (UI) Design" section outlines the following features and functionalities:

- Login with your Facebook account take advantage of additional social features;
- View your calendar, filled with events to help you stay on track with your studying;
- View your classes and access class related content all in one quick and easy place;
- See how you're progressing in class with easy to read infographics;
- Make studying fun and rewarding with an optimized study timer;
- Receive badges as tokens of your awesome studying abilities;
- Have fun and stay motivated with Study Master words of encouragement;
- Compare your progress with friends and classmates;
- View your profile information and stay in contact with friends and classmates;
- Customize your Study Master experience with unique mobile application features that help you be a motivated and focused studying master.

It is suggested the "User Interface Design" document be viewed in conjunction with the associated working prototype, available at: share.axure.com/AA82OE/Login.html.

To view the prototype, visit the link above from your internet-enabled smartphone (the purposed mobile application was designed to be viewed on an iPhone 4 or higher). Next, use your smartphone's menu options to "Add to Home Screen". The prototype will then be accessible from your "Home" screen.

An alternative prototype (for viewing on a personal computer or tablet) is available at: share.axure.com/AA82OE/iPhone_Frame_for_Desktop_View.html.

3.2.3   Gamification Features

The gamification features, as described in Figure 13 & Table 3, include levels, badges, and a leaderboard. Each aspect is detailed in the following section, and is subject to change as the project continues to progress.

3.2.3.1   Leveling

The leveling system for each class will be based on an academic calendar with level and badge completion determined by the number or recommended study hours per class each week ("State University System of Florida Board of Governors," 2013). The leveling system will be based one level for each week of class (i.e. 15 levels in Fall or Spring). The user would set class levels by selecting a "Level Difficulty" setting (i.e. "middle school", "high school", "undergraduate", "graduate", "professional", etc.). Each difficulty setting would determine how each subsequent class level functions and would be based on standard academic calendars for full-time students (i.e. high school = 36 levels per course, undergrad = 15 levels per class, grad = 15 levels per class, etc.).

Table 4. Recommended leveling system based on typical academic calendars for full-time classes.

Level Difficulty	Levels per Class	Number of Classes Full-Time
High School	36	6-8
Undergraduate	15	4-6
Graduate	15	3-4

3.2.3.2 Badges

The default badge system will populate a certain number of badges for each class and level (i.e. 1 badge per level and 15 levels per course with 1 "Master" badge for each completed course). Badges may be color coded for each subject type (i.e. red for English, blue for Science, etc.) and/or have a specific design for each level and completed class (i.e. globe symbol for completing level 2 for Science, star symbol for competing a course). Overall badges would also be awarded for global achievements, such as completing a specific number of courses, or passing a specific number of exams. The badges shown in Figure 15 & Table 5 are only suggestions and are subject to change.
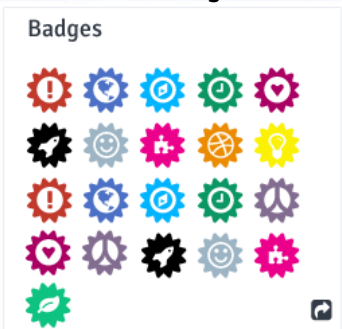
Figure 15. Suggested aesthetic design for badges.

Table 5. Suggested badge types and descriptions.

Type	Description
Class Badge/s	One badge awarded for each class level completed.
Class Master Badge	One badge awarded for completing all class levels.
Exam Badges	One badge awarded for passing or completing a class exam.
Subject Master Badge/s	One badge awarded for mastering all classes in a specific subject.
# Class Master Badge/s	One badge awarded for mastering a specific number of classes (i.e. Master 5 classes, Master 10 classes, etc.).
Break Master Badge	One badge awarded for allowing the study timer to complete the 5-minute break portion following the default study time session.

4   Project Resources

The following section outlines the all project resources, timelines, and key deliverables for the design, development and deployment of the purposed mobile application. The scope will involve: Requirements, Design, Code, Verification and Release, as outlined in Figure 16.

Requirements
(In-House)

• Obtain approvals
• Assemble team

Code
(Outsourced)

• Coding of app
• Test cases
• Unit testing

Release
(In-House)

• Internal release of app
• Stakeholder signoff
• Maintenance Plan
• Marketing

Design
(In-House)

• Architecture design
• Initial wireframes
• Design & graphics

Verification
(Outsourced)

• Testing on devices
• Automated UI tests
• Bug fixes
• Design review/ tweaks

Figure 16. Project Scope: Requirements, Design, Code, Verification and Release; In-House responsibilities are designated in orange, Outsourced responsibilities are designated in blue.

4.1   Roles and Responsibilities

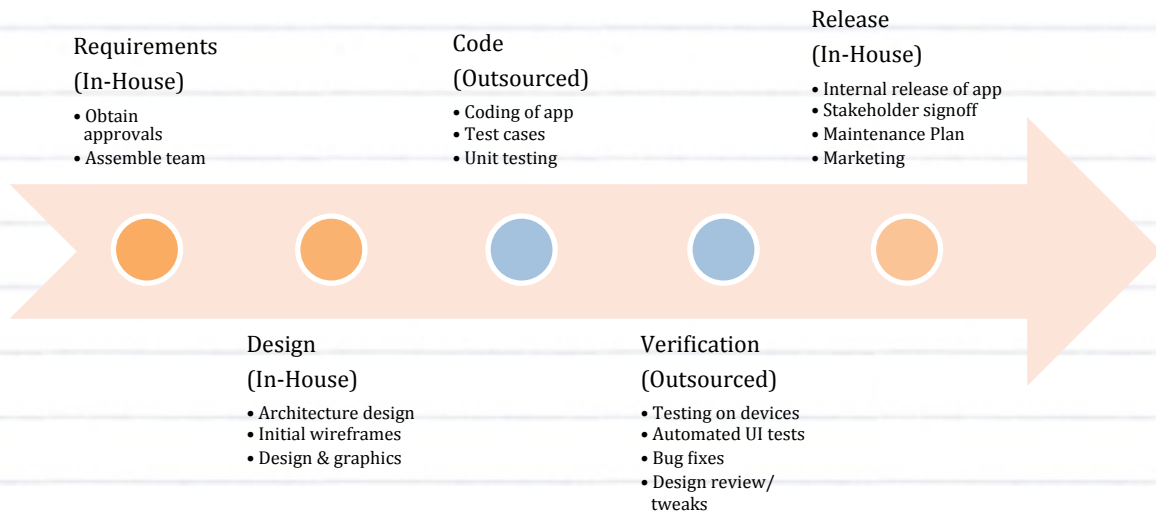This section outlines the roles and responsibilities of project team members. The purposed mobile application will have a team of contributors comprised of both in-house and outsourced members. Roles and responsibilities may be added or modified throughout the development process.

Table 6. Project Team with Title, Description and Responsibility.

Title	Description	Responsibility
Project Manager	Primary stakeholder, responsible for strategic plan, project requirements, schedules, timelines, and overall scope of work.	In-House
Line-of-Business Owner	Primary stakeholder & app user.	In-House/Stakeholders
Sales Associate	Responsible for promoting and marketing the mobile application pre- and post-release.	In-House or Outsourced
User Experience Architect	Responsible for framework of user interaction model and user process flow/journey.	In-House
Technical Architect	Responsible for infrastructure, security and data access models.	Outsourced
Development Manager	Technical lead and project manager.	Outsourced
User Interface Designer	Responsible for app visual design, graphics, and identity.	In-House
IT Manager	Responsible for deployment and life-cycle management.	Outsourced
Developer	Responsible for overall technical architecture and coding.	Outsourced

4.2   Project Staffing Plan

Project staffing will be hired in-house or outsourced as described in Table 6. Any outsourced staffing would be either contracted freelance employees or companies and would abide by the legal requirements described in Section 8.

4.3   Project Materials

The purposed mobile application will require the following project materials for all in-house related roles and responsibilities:
- Microsoft Office Suite (i.e. Excel, Word and Powerpoint),
- Adobe Creative Suite 5.1 or higher (i.e. Photoshop and Illustrator), and
- Axure RP Pro 6.5.

Any roles and responsibilities that are outsourced will be responsible for acquiring any project materials needed for that specific portion of the project. This could include, but is not limited to:
- Coding and Technical Support Software,
- User Testing software and resources, and
- Marketing and/or Promotional Materials.

Additional project materials and training may be required as the project progresses. Software licensing, renewal, and/or upgrades may also be required.

5 Schedule / Development Model

The purposed mobile application will be deployed in three phases. Each phase will take approximately 2-4 weeks, which will be determined by the outsourced project staff and is visualized in Figure 18. The entire process is projected to be complete within 5-6 months, provided outsourced portions of the development process remain on schedule. Phase 1 has already begun, with development and design portions of the project already under development by in-house project staff and the estimated project schedule is visualized below (see Figure 17).
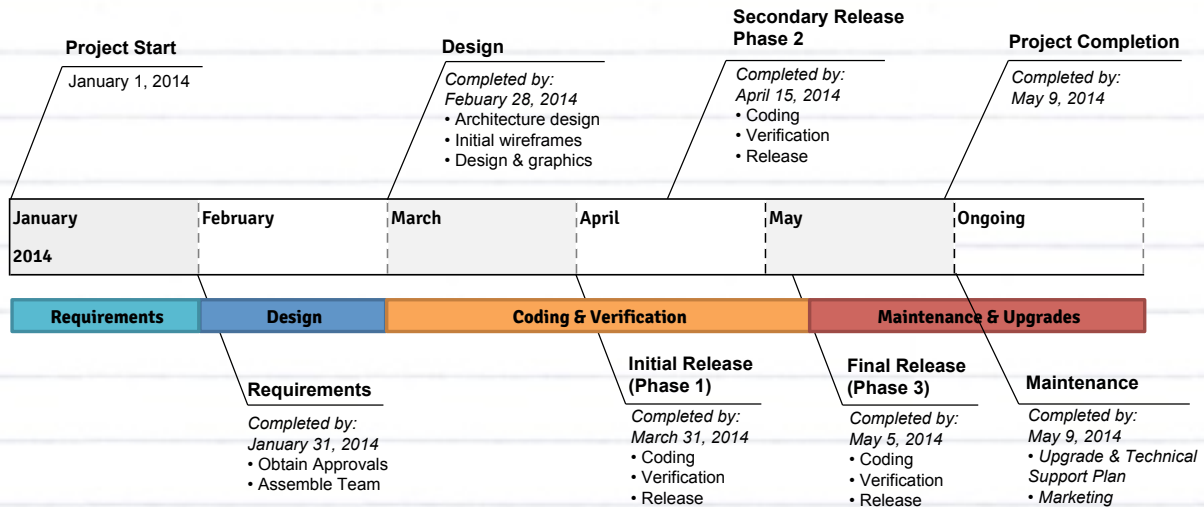
Figure 17. Purposed project schedule with a projected completion date of May 2014

5.1 Deployment

As seen in Table 3 and Figure 13, application features will be deployed in phases, allowing for proper development of the more complex functionalities. The following section describes how each application will be deployed and outlines the phases for the overall application deployment model.

5.1.1 Phases

The deployment phases for the purposed mobile application are depicted in Figure 18. As described earlier, Phase 1 includes development, design, outsourced coding & testing followed by the release of phase 1 application features to iTunes. Phase 2 includes additional outsourced coding and testing of phase 2 application features. Phase 3 includes additional outsourced coding and testing of phase 3 application features. The total deployment process (Phases 1-3) of the purposed application should take approximately 2-3 months. Additional user testing and application maintenance and/or upgrades will continue as needed beyond phase 3.
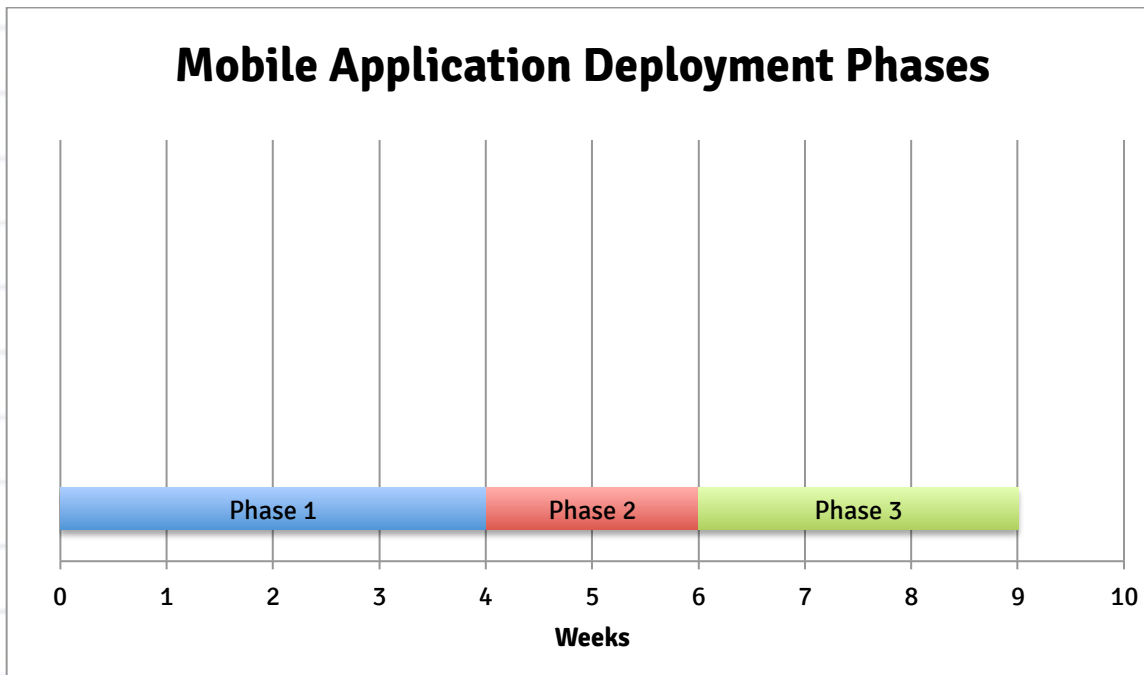
Figure 18. Deployment Phases for purposed mobile application development.

5.2   Project Constraints

Project constraints are primarily related to deployment and would be determined when working with outsourced project staff. These constraints will mostly likely be confined to the features deployed in phase 3, such as the implementation of cloud database features due to technical or financial restraints. Furthermore, the purposed mobile application is designed for initial release in iOS only. Additional technical and budget related restraints might arise should additional platforms be added (i.e. Windows, Andriod, iPad, etc.).

6   Budget Estimate

        This section details the purposed application's overall cost estimate. Startup costs include any one-time licensing fees as well as the cost to outsource development of phase 1 (as outlined Table 3 and Figure 13) (Chomko, 2012; Stangarone, 2013; Thomas, 2013). Maintenance costs include primarily recurring fees, such as developer licensing, marketing, and maintenance for the purposed mobile application, which is typically 15-20% of the development cost (Chomko, 2012; Stangarone, 2013). Feature upgrade costs include the cost to outsource development of phases 2-3 (as outlined in Table 3 and Figure 13) as well as any additional optional features or functionalities such as cross-platform development fees and in-app purchasing. All estimated totals use the highest price listed; actual budget cost may be lower depending on final development costs and all platforms and features required. Any optional features not considered "useful", "critical", or "important" (as described in Table 3) are denoted with (*).

Table 7. Estimated Budget; (*) denotes optional features not considered useful, critical or important.

Item Category	Name	Description	Frequency	Cost
Startup Cost	**Copyright Registration**	Cost to register the copyright/s associated with the purposed mobile application	One-time fee	$35
	Incorporation Fee	Cost to incorporate.	One-time fee	$99
	App Development [Phase 1]	Cost to develop **phase 1**.	One-time fee	$30,000
Total Startup Cost				**$30,134**
Maintenance Cost	**iOS Apple Developer License**	Single-platform development for iOS to be released on Apple iTunes.	Recurring (per year)	$99
	App Staffing Costs	Cost maintain the application in-house, including: marketing, project management, and/or any additional UI redesign needed for updates or platform upgrades.	Recurring (Hourly rate)	$190
	Maintenance & Updates	Cost to maintain and update technical aspects; approximately 15-20 % of total feature & development costs (not including licensing).	Recurring	$23,200
Total Maintenance Cost (per year)				**$99**
Feature Upgrade Cost	**App Development [Phase 2]**	Cost to develop **phase 2**.	One-time fee	$20,000
	App Development [Phase 3]	Cost to develop **phase 3**.	One-time fee	$30,000
	Andriod Google Play Developer License	Cross-platform development for Andriod to be released on Google Play.	One-time fee	$25*
	Windows Developer License	Cross-platform development for Windows.	Recurring (per year)	$19*
	iPad Compatibility	Cross-platform development for iPad to be released on Apple iTunes	One-time fee	$15,000-$30,000*
	App Development [Music & SFX]	Cost to add music and/or sound effects (SFX).	One-time fee	$1,000*
	App Development [In-App Purchases]	Cost to incorporate in-app purchases (i.e. could be released in Phase 1 or Phase 2)	One-time fee	$1,000-$5,000
Total Feature Upgrade Cost				**$51,000 - $86,044**

Staff Cost (In-House)	Project Manager	Responsible for strategic plan, project requirements, schedules, timelines, and overall scope of work	Hourly	$50
	Sales Associate	Responsible for promoting and marketing the mobile application pre- and post-release	Hourly	$50
	User Interface Designer	Responsible for app visual design, graphics, and identity	Hourly	$90
	User Experience Architect	Responsible for framework of user interaction model and user process flow/journey	Hourly	$90

Total User Interface Designer Cost (Phase 1, 200 Hours)	**$18,000**
Total User Experience Architect Cost (Phase 1, 200 Hours)	**$18,000**
Total Sales Associate Cost (Phase 1-3, 500 Hours)	**$25,000**
Total Project Manager Cost (Phase 1-3, 500 Hours)	**$25,000**
Total Staff Cost (not including recurring cost)	**$86,000**
Total Estimated Outsourced Development Costs after Phase 3 (Including all optional features)	**$116,000**
Total Estimated Application Cost after Phase 3 (including all optional features on iPhone only)	**$172,233**
Total Estimated Application Cost after Phase 3 (Including all optional features & platforms)	**$202,277**

7   Ownership Model

The purposed mobile application will be available for free with in-app purchase options through the Apple iTunes store. The following in-app purchases are suggested for the final release of the purposed mobile application, and may be modified as the project moves forward. These in-app purchases may include:

1. **Special Avatars ($0.99 one-time-purchase)**
   a. Special avatars would be designed to simulate the aesthetic in the Study Master© branding, such as variations of ninjas including different genders, colors, etc.
2. **Special Badges ($0.99 one-time-purchase)**
   a. Special badge packs would be designed with specific themes (i.e. holiday themes, academic themes specific to actual college classes instead of generic, etc.), and could be continuously updated.
3. **Custom School Themes ($0.99-$4.99 one-time-purchase)**
   a. Custom school themes would be created and sold to schools, which would offer custom school colors for the user interface, integration of school logos and/or mascots, custom ringtones, etc.
4. **Teacher Mode ($8.99-$26.99 monthly subscription OR $47.99 one-time purchase)**
   a. This upgraded version of the purposed mobile application would offer access to "Administrator Functions" (as outlined in Table 3 and Figure 13) such as multitasking functions, desktop/website support, track student progress, etc.).

5. **Content Cloud Mode ($1.99 monthly subscription OR one-time purchase)**
   a. This upgraded version of the purposed mobile application would offer the option to use features with access to cloud database functionality (i.e. upload/view documents, access course materials, save notes & audio, etc.).
6. **Record audio notes & lectures ($0.99-$1.99 one-time purchase)**
   a. This option would allow for use of audio-based features " (as outlined in Table 3 and Figure 13).

7.1   Return on Investment (ROI)

As described earlier in the Introduction (see Figure 1), the purposed mobile application could reach over 36 million users in the academic market alone. If the statistics described by Maxwell (2011) are applied to the above budget estimate, over 2.43 million (6.75%) of the users described in Figure 1 have an iPhone. If the estimated cost to develop the purposed application on only an iPhone is $172,277 (see Table 7), then the purposed mobile application would have to reach 14.1 users per dollar. If the purposed mobile application is later expanded to include all mobile platforms the reach would increase to approximately 8.29 million users with approximately 48.1 users per dollar (Maxwell, 2011).

Furthermore, analytical data described by Perez (2013) shows over 71% of revenue from mobile applications in iTunes came from free applications with in-app purchases. This supports the purposed ownership model. Additionally, data shows the average revenue per download for free applications with in-app purchases is $0.93 (Perez, 2013). That means the purposed mobile application could have a return on investment of approximately $2.26 million in the first year, if the potential reach is 2.43 million users.

8   Legal Requirements

The following section outlines the legal requirements for the purposed mobile application, including copyright, intellectual property rights, contracts and privacy policies (Picciafuoco, 2012). All relevant legal documents can be found in the Appendix. Additional legal requirements may be needed as the project progresses; specific needs will be addressed as they arise.

8.1   Copyright

The purposed mobile application's name and branding must have a registered copyright the project is approved. The copyright process can be completed by going to United States Copyright Office website ("United States Copyright Office," 2013). The relevant forms are also included with this document (See Appendix).

8.2   Intellectual Property Rights

Any software components of the deliverables will be released under appropriate licenses. The Intellectual Property Rights will be held by the primary stakeholder/s. Relevant documentation can be found in Appendix A.

8.3   Contract for Mobile Application Development Services

All project staff (including in-house staff and outsourced staff), must complete a "Contract for Mobile Application Development Services". The document in Appendix B will be modified appropriately.

8.4   Privacy Policy

When the purposed mobile application reaches phase 3 of the deployment schedule, outlined in Figure 17 and Figure 18, a privacy policy will be required. The document in Appendix C will be modified and implemented prior to the final release of the purposed mobile application.

9   Cultural Considerations

This section contains motivations and considerations that are specific to the sociological factors that affect the acceptability of the product. While the purposed mobile application is focused on the United States market, the following cultural requirements should still be considered:
- Branding and visual imagery associated with the purposed mobile application, such as the primary logo, badge designs and any related character-based illustrations may need to be revised or replaced, as they may be unrecognizable or offensive to some cultures;
- Additional language options should be considered if marketing to other countries or cultures where languages other than English are frequently spoken;
- Reconsider the numbering system/s associated with the gamification functions of the application for users that don't follow the typical United States academic calendar.

10   Suggested Marketing Strategies

The purposed mobile application is designed to follow a self-promoting marketing strategy. However, additional marketing may be required especially of the application is marketed to educational institutions (i.e. public or private schools, colleges, etc.). In this case, all marketing strategies would be managed in-house or through outsourced project staff as needed. Funding would be appropriated out of the staffing cost for the Sales Associate, as outlined in Table 7.

As described in the Budget Estimate and Ownership Model sections, focusing marketing strategies on the educational market should lead to the most sales. Some suggested marketing strategies include, but are not limited to:
- MailChimp can be used to send out e-mail based newsletters to interested parties – signup would be made available via the project website: StudyMasterApp.weebly.com;
- Social networking accounts can be created to promote the purposed mobile application (i.e. Facebook, Twitter, etc.);
- Print-based marketing materials could be created to be distributed directly to interested parties, such as educational institutions or individual users;
- In-house and/or outsourced staff (i.e. Project Lead, Sales Associate, etc.) could market the purposed mobile application at educational trade shows and conferences ("Education Conferences,").

11 Annotated Bibliography

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Statistical information for public and private educational institutions as regulated by the
U.S. Department of Education Institute of Education Sciences National Center for Education
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An article by an Adage Technologies employee regarding the costs involved in
developing a mobile application.

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Engineering and, 54*(2).
The Pomodoro Technique is a time management method which breaks down tasks into
sections in order to boost productivity and motivation. The method recommends focusing on
a task for 25 minutes using a timer then taking a short break. It was developed using
previous academic research and time management techniques and aims to ease anxiety,
enhance effectiveness and facilitate learning. This method is the primary basis for the
functionality of the purposed mobile application.

Cohen, A. M. (2011). The Gamification of Education. *FUTURIST, 45*(5), 16-17.
A short article summarizing potential reasons that an online social game environment in the
style of an MMORPG could be effective for learning. Arguments included continuous
engagement, the encouragement of trial-and-error approaches, exploration, collaboration,
exchange of ideas, and encouragement of outside research and reading. It is also ideal to
include some sort of mechanic to prevent the game play from being harmfully habit-forming
while still engaging.

Dominguez, A., Saenz-de-Navarrete, J., de-Marcos, L., Fernandez-Sanz, L., Pages, C., & Martinez-
Herraiz, J. J. (2013). Gamifying learning experiences: Practical implications and outcomes.
COMPUTERS & EDUCATION, 63, 380-392.
Authors created a gamified version of a university course by adding plugins to the online
portion of the course to gamify the presentation of materials with the additions of
achievements and leaderboards (public showings of number of achievements gained) based
on the completion of gamified content. The participants also had the option of using the
traditional, non-gamified versions of the course content, thus dividing the experimental
group into those that did and those that did not make use of the gamified content. Authors
felt that the gamified material provided additional motivation to students, but quantitative
analysis of exam scores revealed limited impact of gamification on the cognitive aspects of
educative content.

Education Conferences.). Retrieved December 3, 2013, from
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A list of educational conferences and trade shows organized by sub-categories.

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expectancy-value theory. *Educational Psychology, 31*(2), 157-175.
A study on social influences on school motivation among high school students and gender-
based differences on the impact of those influences on motivation. It was observed that
"teacher-student relationship characterized by warmth and support increases students' self-
perceived confidence and learning" by exerting influence on the intrinsic values that

students placed on the subjects of math and English. It was also observed that the students' peers' value of learning was positively linked to student self-efficacy and utility value (perception of how useful studying is to complete their goals) placed on math and English. When applying this research to the purposed mobile application, the suggested social functions would potentially increase user study times and foster a positive relationship between peers' academic value and motivation.

How Teens Can Build Better Time Management and Study Skills.). Retrieved November 25, 2013, from http://www.ncld.org/students-disabilities/homework-study-skills/study-skills-teens This article outlines some suggestions for improving study skils for students with disabilities as well as teens.

Lenhart, A., Campbell, S., Ling, R., & Purcell, K. (2010). Teens and Mobile Phones. *Pew internet & American life project.*
To understand the role that cell phones play in teens' lives, the Pew Research Center's Internet & American Life Project and Michigan's Department of Communication Studies conducted a survey and focus groups in the latter part of 2009. The phone survey was conducted on landline and cell phones and included 800 youth ages 12-17 and one of their parents. It was administered from June 26-September 24, 2009. This study covers the basics of teen mobile acquisition and use, what they can do and how they use them including social aspects, as well as attitudes and regulation among parents and schools.

Maxwell, A. (2011). Is Developing a Mobile App Worth the Cost? Retrieved from http://mashable.com/2011/02/24/mobile-app-dev-cost/ A blog post written by the founder of a mobile web design company describes the cost involved with developing a mobile application and whether the ROI justifies the cost of producing it.

Perez, S. (2013). In-App Purchase Revenue Hits Record High: Accounts For 76% Of U.S. iPhone App Revenue, 90% In Asian Markets. Retrieved from http://techcrunch.com/2013/03/28/in-app-purchase-revenue-hits-record-high-accounts-for-76-of-u-s-iphone-app-revenue-90-in-asian-markets/ This blog posting gives a brief overview of the analytics collected by Distimo in January 2012 regarding revenue for in-app purchases. The featured data coveres in-app purchases for iphone applications for paid applications, paid applications with in-app purchases, and free applications with in-app purchases.

Picciafuoco, V. (2012). 5 Free Legal Contracts That Every Mobile Developer Needs. Retrieved from http://www.sitepoint.com/5-critical-contracts-for-mobile-app-developers/ Describes legal documents and other related information for mobile developers.

Purcell, K., Heaps, A., Buchanan, J., & Friedrich, L. (2013). How teachers are using technology at home and in their classrooms. *Pew Research Center's Internet & American Life Project.* A survey of 2,462 Advanced Placement (AP) and National Writing Project (NWP) teachers finds that digital technologies have helped them in teaching their middle school and high school students in many ways. At the same time, the internet, mobile phones, and social media have brought new challenges to teachers. This study aids this project by showing the need for and use of mobile technologies such as the purposed mobile application in an educational context both inside and outside the classroom.

Smith, A., Rainie, L., & Zickuhr, K. (2011). College students and technology. *Pew Internet & American Life Project, 19.*

This research was conducted in 2010 surveying users who attended community college, 4-year schools, and graduate schools.The findings outline internet use, social media use gadget ownership as well as cell phones and internet connectivity.

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Outlines the policies and regulations for educational institutions within the state of Florida. This website was referenced for information regarding academic calendars, recommended study hours, full-time credit status and other educational information.

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United States Copyright Office. (2013). 2013, from United States Copyright Office

Government regulated information regarding copyright law and regulation.

12 Appendix

Appendix A. Intellectual Property Assignment Agreement.

INTELLECTUAL PROPERTY ASSIGNMENT AGREEMENT

This Intellectual Property Assignment Agreement (the "Agreement") is made and entered into as Oct 15, 2013, by and between (the "Company") and (the "Recipient") (collectively, the "Parties").

The Parties hereby agree as follows:

1. The Recipient agrees to assign to the Company, or its designee, all right, title, and interest in and to any and all inventions, original works of authorship, developments, concepts, improvements, designs, drawings, discoveries, algorithms, formulas, computer code, ideas, trademarks, or trade secrets, whether or not patentable or registrable under patent, copyright or similar laws, related to the Company's business, which the Intern may solely or jointly conceive or develop or reduce to practice, or cause to be conceived or developed or reduced to practice, with the use of Company's equipment, supplies, facilities, assets, or Company Confidential Information (*see* NONDISCLOSURE AGREEMENT), or which may arise out of any research or other activity conducted under the direction of the Company (collectively referred to as "Intellectual Property").

2. The Recipient understands and agrees that (i) all original works for authorship which are made by the Recipient (solely or jointly with others) within the scope of the Company's business which are protectable by copyright are "works made for hire," as that term is defined in the United States Copyright Act and (ii) the decision whether or not to commercialize or market any Intellectual Property is within the Company's sole discretion and for the Company's sole benefit and that no royalty or other consideration will be due to the Recipient as a result of the Company's efforts to commercialize or market any such Intellectual Property.

3. The validity, construction and enforceability of this Agreement shall be governed in all respects by the law of the State of Delaware. This Agreement may not be amended except in writing signed by a duly authorized representative of the respective Parties. This Agreement shall control in the event of a conflict with any other agreement between the Parties with respect to the subject matter hereof. The failure of either party to enforce its rights under this Agreement at any time for any period shall not be construed as a waiver of such rights.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date first above written.

Appendix B. Application Development Agreement.

APPLICATION DEVELOPMENT AGREEMENT

This Mobile Application Development Agreement (the "Agreement") is entered into as of December 31, 2011, effective as of February 20, 2012 (the "Effective Date") by and between [NAME OF DEVELOPER HERE], (the "Developer"), and [NAME OF HIRING COMPANY HERE], a [STATE OF INCORPORATION] Limited Liability Corporation (the "Company," and together with the Developer, the "Parties").

RECITALS

WHEREAS, the Company is engaged in providing [PRIMARY BUSINESS OF THE COMPANY]; and

WHEREAS, the Developer is engaged in the business of developing and designing mobile application solutions; and

WHEREAS, the Company wishes to engage the Developer as an independent contractor for the Company for the purpose of designing and developing the Company's mobile ordering system (the "Application") on the terms and conditions set forth below; and

WHEREAS, the Developer wishes to develop the Application and agrees to do so under the terms and conditions of this Agreement; and

WHEREAS, each Party is duly authorized and capable of entering into this Agreement.

NOW THEREFORE, in consideration of the above recitals and the mutual promises and benefits contained herein, the Parties hereby agree as follows:

1.   PURPOSE.

The Company hereby appoints and engages the Developer, and the Developer hereby accepts this appointment, to perform the services described in [EXHIBIT A] attached hereto and made a part hereof, in connection with the design and development of the Application (collectively, the "Services").

2.   COMPENSATION.

The total compensation for the development of the Website shall be as set forth in [EXHIBIT A] hereto. These payments shall be made in installments according to the schedule set forth in [EXHIBIT A] hereto.

3.   TERM.

This Agreement shall become effective as of the Effective Date and, unless otherwise terminated in accordance with the provisions of Section 4 of this Agreement, will continue until the Services have been satisfactorily completed and the Developer has been paid in full for such Services (the "Term") [or on the expiration of the Warranty Period as defined in subsection 9(a) of this Agreement.].

4.   TERMINATION.

(a)   Types of Termination. This Agreement may be terminated:

1.   By either Party on provision of seven (7) days written notice to the other Party.

2.   By either Party for a material breach of any provision of this Agreement by the other Party, if the other Party's material breach is not cured within three (3) days of receipt of written notice thereof. This shall include any delays to the timeline specified in Schedule A.

3.   By the Company at any time and without prior notice, if the Developer is convicted of any crime or offense, fails or refuses to comply with the written policies or reasonable directives of the Company, or is guilty of serious misconduct in connection with performance under this Agreement.

(b)   Responsibilities after Termination. Following the termination of this Agreement for any reason, the Company shall promptly pay the Developer according to the terms of Exhibit A for Services rendered before the effective date of the termination (the "Termination Date"). The Developer acknowledges and agrees that no other compensation, of any nature or type, shall be payable hereunder following the termination of this Agreement. All intellectual property developed pursuant to this Agreement before the Termination Date shall be delivered to the Company within one day of the Termination Date.

5.   RESPONSIBILITIES.

(a)   Of the Developer. The Developer agrees to do each of the following:

1.   Create the Application System as detailed in [EXHIBIT A] to this Agreement, and extend its best efforts to ensure that the design and functionality of the Application System meets the Company's specifications.

2.   Devote as much productive time, energy, and ability to the performance of its duties hereunder as may be necessary to provide the required Services in a timely and productive manner and to the timeframe specified in [EXHIBIT A].

3.   Perform the Services in a workmanlike manner and with professional diligence and skill, as a fully-trained, skilled, competent, and experienced personnel.

4.   On completion of the Application System, assist the Company in installation of the Application System to its final location, which assistance will include helping the Company with its upload of the finished files to the Company's selected Web-hosting company and submitting for approval on the Apple Store.

5.   Provide all files and code to the Company.

6.   Provide Services and an Application System that are satisfactory and acceptable to the Company and substantially free of defects.

7.   Communicate with the Company regarding progress it has made with respect to the milestones listed in [EXHIBIT A] in performing the Services upon an agreeable time each week.

(b)   Of the Company. The Company agrees to do each of the following:

1.   Engage the Developer as the creator of its Application System as further detailed in [EXHIBIT A] to this Agreement.

2.   Provide all assistance and cooperation to the Developer in order to complete the Application System timely and efficiently.

3.   Provide initial information, and supply all content for the Application System.

6.   SUPPORT PERIOD.

The Developer agrees to provide continued support for the Application System for 90 days after the iPhone application is successfully approved on the Apple Store (the "Support Period"). The Support Period shall refer to any bugs or issues relating to the features specified in [EXHIBIT A], and not to create new functionality for the Application System. This support will be provided to the Company at no additional cost.

7.   CONFIDENTIAL INFORMATION.

The Developer agrees, during the Term and thereafter, to hold in strictest confidence, and not to use, except for the benefit of the Company, or to disclose to any person, firm, or corporation without the prior written authorization of the Company, any Confidential Information of the Company. "Confidential Information" means any of the Company's proprietary information, technical data, trade secrets, or know-how, including, but not limited to, business plans, research, product plans, products, services, customer lists, markets, software, developments, inventions, processes, formulas, technology, designs, drawings, engineering, hardware configuration information, marketing, finances, or other business information disclosed to the Developer by the Company either directly or indirectly.

8.   PARTIES' REPRESENTATIONS AND WARRANTIES.

(a)   The Parties each represent and warrant as follows:

1.   Each Party has full power, authority, and right to perform its obligations under the Agreement.

2.   This Agreement is a legal, valid, and binding obligation of each Party, enforceable against it in accordance with its terms (except as may be limited by bankruptcy, insolvency, moratorium, or similar laws affecting creditors' rights generally and equitable remedies).

3.   Entering into this Agreement will not violate the charter or bylaws of either Party or any material contract to which that Party is also a party.

(b)   The Developer hereby represents and warrants as follows:

1.   The Developer has the right to control and direct the means, details, manner, and method by which the Services required by this Agreement will be performed.

2.   The Developer has the experience and ability to perform the Services required by this Agreement.

3.   The Developer has the right to perform the Services required by this Agreement at any place or location, and at such times as the Developer shall determine.

4.   The Services shall be performed in accordance with and shall not violate any applicable laws, rules, or regulations, and the Developer shall obtain all permits or permissions required to comply with such laws, rules, or regulations.

5.   The Services required by this Agreement shall be performed by the Developer, and the Company shall not be required to hire, supervise, or pay any assistants to help the Developer perform such services.

6.   The Developer is responsible for paying all ordinary and necessary expenses of itself or its staff.

(c)   The Company hereby represents and warrants as follows:

1.   The Company will make timely payments of amounts earned by the Developer under this Agreement and as detailed in[EXHIBIT A] hereto.

2.   The Company shall notify the Developer of any changes to its procedures affecting the Developer's obligations under this Agreement at least three days prior to implementing such changes.

3.   The Company shall provide such other assistance to the Developer as it deems reasonable and appropriate.

9.   WEBSITE REPRESENTATIONS AND WARRANTIES.

(a)   <u>Performance</u>. The Developer hereby warrants and represents that for a period of 90 days following delivery of the Application System to the Company pursuant to [EXHIBIT A] (the "Support Period"), the Website will be free from programming errors and defects in workmanship and materials, and will conform to the specifications of [EXHIBIT A]. If programming errors or other defects are discovered during the Support Period, the Developer shall promptly remedy those errors or defects at its own expense.

(b)   <u>No Disablement.</u> The Developer hereby warrants and represents that the Application System, when delivered or accessed by the Company, will be free from material defects, and from viruses, logic locks, and other disabling devices or codes, and in particular will not contain any virus, Trojan horse, worm, drop-dead devices, trap doors, time bombs, or other software routines or other hardware component that could permit unauthorized access, disable, erase, or otherwise harm the Application System or any software, hardware, or data, cause the Application System or any software or hardware to perform any functions other than those specified in this Agreement, halt, disrupt, or degrade the operation of the Application System or any software or hardware, or perform any other such actions.

10.   TIMING AND DELAYS.

The Developer recognizes and agrees that failure to deliver the Website in accordance with the delivery schedule detailed in [EXHIBIT A] to this Agreement will result in expense and damage to the Company. The Developer shall inform the Company immediately of any anticipated delays in the delivery schedule and of any remedial actions being taken to ensure completion of the Application System according to such schedule. If a delivery date is missed, the Company may, in its sole discretion, declare such delay a material breach of the Agreement under subsection 4(a) and pursue all of its legal and equitable remedies. The Company may not declare a breach, and the Developer cannot be held in breach of this Agreement, of this section if such delay is caused by an action or failure of action of the Company. In such case, the Developer will provide the Company with written notice of the delay and work on the Application System will work until the reason for the delay has been resolved by the Company and written notice of that resolution has been provided to the Developer.

11.   NATURE OF RELATIONSHIP.

(a)   <u>Independent Contractor Status</u>. The Developer agrees to perform the Services hereunder solely as an independent contractor. The Parties agree that nothing in this Agreement shall be construed as creating a joint venture, partnership, franchise, agency, employer/employee, or similar relationship between the Parties, or as authorizing either Party to act as the agent of the

other. The Developer is and will remain an independent contractor in its relationship to the Company. The Company shall not be responsible for withholding taxes with respect to the Developer's compensation hereunder. The Developer shall have no claim against the Company hereunder or otherwise for vacation pay, sick leave, retirement benefits, social security, worker's compensation, health or disability benefits, unemployment insurance benefits, or employee benefits of any kind. Nothing in this Agreement shall create any obligation between either Party and a third party.

(b)   Indemnification of Company by Developer. The Company has entered into this Agreement in reliance on information provided by the Developer, including the Developer's express representation that it is an independent contractor and in compliance with all applicable laws related to work as an independent contractor. If any regulatory body or court of competent jurisdiction finds that the Developer is not an independent contractor and/or is not in compliance with applicable laws related to work as an independent contractor, based on the Developer's own actions, the Developer shall assume full responsibility and liability for all taxes, assessments, and penalties imposed against the Developer and/or the Company resulting from such contrary interpretation, including but not limited to taxes, assessments, and penalties that would have been deducted from the Developer's earnings had the Developer been on the Company's payroll and employed as an employee of the Company.

12.   WORK FOR HIRE.

(a)   Work for Hire. The Developer expressly acknowledges and agrees that any all proprietary materials prepared by the Developer under this Agreement shall be considered "works for hire" and the exclusive property of the Company unless otherwise specified. These items shall include, but shall not be limited to, any and all deliverables resulting from the Developer's Services or contemplated by this Agreement, all tangible results and proceeds of the Services, works in progress, records, diagrams, notes, drawings, specifications, schematics, documents, designs, improvements, inventions, discoveries, developments, trademarks, trade secrets, customer lists, databases, software, programs, middleware, applications, and solutions conceived, made, or discovered by the Developer, solely or in collaboration with others, during the Term of this Agreement relating in any manner to the Developer's Services.

(b)   Additional Action to Assign Interest. To the extent such work may not be deemed a "work for hire" under applicable law, the Developer hereby assigns to the Company all of its right, title, and interest in and to such work. The Developer shall execute and deliver to the Company any instruments of transfer and take such other action that the Company may reasonably request, including, without limitation, executing and filing, at the Company's expense, copyright applications, assignments, and other documents required for the protection of the Company's rights to such materials.

(c)   Notice of Incorporation of Existing Work. If the Developer intends to integrate or incorporate any work that it previously created into any work product to be created in furtherance of its performance of the Services, the Developer must obtain the Company's prior written approval of such integration or incorporation. If the Company, in its reasonable discretion, consents, the Company is hereby granted an exclusive, worldwide, royalty-free, perpetual, irrevocable license to use, distribute, modify, publish, and otherwise exploit the incorporated items in connection with the work product developed for the Company.

13.   NO CONFLICT OF INTEREST; OTHER ACTIVITIES.

The Developer hereby warrants to the Company that, to the best of its knowledge, it is not currently obliged under any existing contract or other duty that conflicts with or is inconsistent with this Agreement. During the Term, the Developer is free to engage in other development activities; provided, however, the Developer shall not accept work, enter into contracts, or accept obligations inconsistent or incompatible with the Developer's obligations or the scope of Services to be rendered for the Company pursuant to this Agreement.

14.   RETURN OF PROPERTY

Within three (3) days of the termination of this Agreement, whether by expiration or otherwise, the Developer agrees to return to the Company all Company products, samples, models, or other property and all documents, retaining no copies or notes, relating to the Company's business including, but not limited to, reports, abstracts, lists, correspondence, information, computer files, computer disks, and all other materials and all copies of such material obtained by the Developer during and in connection with its representation of the Company. All files, records, documents, blueprints, specifications, information, letters, notes, media lists, original artwork/creative, notebooks, and similar items relating to the Company's business, whether prepared by the Developer or otherwise coming into its possession, shall remain the Company's exclusive property.

15.   INDEMNIFICATION.

(a)   Of Company by Developer. The Developer shall indemnify and hold harmless the Company and its officers, members, managers, employees, agents, contractors, sublicensees, affiliates, subsidiaries, successors and assigns from and against any and all damages, liabilities, costs, expenses, claims, and/or judgments, including, without limitation, reasonable attorneys' fees and disbursements (collectively, the "Claims") that any of them may suffer from or incur and that arise or result primarily from (i) any gross negligence or willful misconduct of the Developer arising from or connected with the Developer's carrying out of its duties under this Agreement, or (ii) the Developer's breach of any of its obligations, agreements, or duties under this Agreement.

(b)   Of Developer by Company. The Company shall indemnify and hold harmless the Developer from and against all Claims that it may suffer from or incur and that arise or result primarily from (i) the Company's operation of its business, (ii) the Company's breach or alleged breach of, or its failure or alleged failure to perform under, any agreement to which it is a party, or (iii) the Company's breach of any of its obligations, agreements, or duties under this Agreement; provided, however, none of the foregoing result from or arise out of the actions or inactions of the Developer.

16.   INTELLECTUAL PROPERTY.

(a)   No Intellectual Property Infringement by Developer. The Developer hereby represents and warrants that the use and proposed use of the Website by the Company or any third party does not and shall not infringe, and the Developer has not received any notice, complaint, threat, or claim alleging infringement of, any trademark, copyright, patent, trade secrets, industrial design, or other rights of any third party in the Website, and the use of the Website will not include any activity that may constitute "passing off." To the extent the Website infringes on the rights of any such third party, the Developer shall obtain a license or consent from such third party permitting the use of the Website.

(b)   No Intellectual Property Infringement by Company. The Company represents to the Developer and unconditionally guarantees that any elements of text, graphics, photos, designs,

trademarks, or other artwork furnished to the Developer for inclusion in the Website are owned by the Company, or that the Company has permission from the rightful owner to use each of these elements, and will hold harmless, protect, indemnify, and defend the Developer and its subcontractors from any liability (including attorneys' fees and court costs), including any claim or suit, threatened or actual, arising from the use of such elements furnished by the Company.

(c)　　　Continuing Ownership of Existing Trademarks. The Developer recognizes the Company's right, title, and interest in and to all service marks, trademarks, and trade names used by the Company and agrees not to engage in any activities or commit any acts, directly or indirectly, that may contest, dispute, or otherwise impair the Company's right, title, and interest therein, nor shall the Developer cause diminishment of value of said trademarks or trade names through any act or representation. The Developer shall not apply for, acquire, or claim any right, title, or interest in or to any such service marks, trademarks, or trade names, or others that may be confusingly similar to any of them, through advertising or otherwise. Effective as of the termination of this Agreement, the Developer shall cease to use all of the Company's trademarks, marks, and trade names.

17.　　AMENDMENTS.

No amendment, change, or modification of this Agreement shall be valid unless in writing and signed by both Parties.

18.　　ASSIGNMENT.

The Company may assign this Agreement freely, in whole or in part. The Developer may not, without the written consent of the Company, assign, subcontract, or delegate its obligations under this Agreement, except that the Developer may transfer the right to receive any amounts that may be payable to it for its Services under this Agreement, which transfer will be effective only after receipt by the Company of written notice of such assignment or transfer.

19.　　SUCCESSORS AND ASSIGNS.

All references in this Agreement to the Parties shall be deemed to include, as applicable, a reference to their respective successors and assigns. The provisions of this Agreement shall be binding on and shall inure to the benefit of the successors and assigns of the Parties.

20.　　FORCE MAJEURE.

A Party shall be not be considered in breach of or in default under this Agreement on account of, and shall not be liable to the other Party for, any delay or failure to perform its obligations hereunder by reason of fire, earthquake, flood, explosion, strike, riot, war, terrorism, or similar event beyond that Party's reasonable control (each a "Force Majeure Event"); provided, however, if a Force Majeure Event occurs, the affected Party shall, as soon as practicable:

(a)　　　notify the other Party of the Force Majeure Event and its impact on performance under this Agreement; and

(b)　　　use reasonable efforts to resolve any issues resulting from the Force Majeure Event and perform its obligations hereunder.

21.　　NO IMPLIED WAIVER.

The failure of either Party to insist on strict performance of any covenant or obligation under this Agreement, regardless of the length of time for which such failure continues, shall not be deemed a waiver of such Party's right to demand strict compliance in the future. No consent or waiver, express

or implied, to or of any breach or default in the performance of any obligation under this Agreement shall constitute a consent or waiver to or of any other breach or default in the performance of the same or any other obligation.

22.   NOTICE.

Any notice or other communication provided for herein or given hereunder to a Party hereto shall be in writing and shall be given in person, by overnight courier, or by mail (registered or certified mail, postage prepaid, return-receipt requested) to the respective Parties as follows:

If to the Company:

 [[ADDRESS]]

If to the Developer:

[[ADDRESS]]

23.   GOVERNING LAW.

This Agreement shall be governed by the laws of the state of New York. In the event that litigation results from or arises out of this Agreement or the performance thereof, the Parties agree to reimburse the prevailing Party's reasonable attorneys' fees, court costs, and all other expenses, whether or not taxable by the court as costs, in addition to any other relief to which the prevailing Party may be entitled.

24.   COUNTERPARTS/ELECTRONIC SIGNATURES.

This Agreement may be executed in one or more counterparts, each of which shall be deemed an original but all of which shall constitute one and the same instrument. For purposes of this Agreement, use of a facsimile, e-mail, or other electronic medium shall have the same force and effect as an original signature.

25.   SEVERABILITY.

Whenever possible, each provision of this Agreement will be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be invalid, illegal, or unenforceable in any respect under any applicable law or rule in any jurisdiction, such invalidity, illegality, or unenforceability will not affect any other provision or any other jurisdiction, but this Agreement will be reformed, construed, and enforced in such jurisdiction as if such invalid, illegal, or unenforceable provisions had never been contained herein.

26.   ENTIRE AGREEMENT.

This Agreement, constitutes the final, complete, and exclusive statement of the agreement of the Parties with respect to the subject matter hereof, and supersedes any and all other prior and contemporaneous agreements and understandings, both written and oral, between the Parties.

27.   HEADINGS.

Headings used in this Agreement are provided for convenience only and shall not be used to construe meaning or intent.

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*

EXHIBIT A

A. PURPOSE OF APPLICATION SYSTEM.

The purpose of the Application System is to create a platform for the Company to [INSERT PURPOSE OF MOBILE APPLICATION]. The Application System will be comprised of three parts – i) web services and database, ii)[IPHONE APPLICATION], and iii) [IPAD APPLICATION]. The Company shall be provide the web service and database, and Developer will be responsible for the[IPHONE APPLICATION] and the [IPAD APPLICATION].

B. SERVICES.

In exchange for the Design Fee, the Developer will produce an Application System, in accordance with the Schedule of features detailed below:

[INSERT SPECIFICATIONS]

CONTENT.

All content shall be provided to the Developer by the Company in the formats specified below:

1.   All text shall be provided in ASCII, RTF, PageMaker, WordPerfect, Word, PDF, or HTML

2.   All graphics shall be provided in TIFF, GIF, JPEG, or PMP formats

D. SPECIFICATIONS.

The Parties hereby agree on the following specifications for the Application (collectively, the "Specifications"):

1.   The graphics used in the Application shall be in JPEG

2.   The Developer shall develop the Application to project the highest professional image. The Developer shall not include any links to other sites without the Company's prior written consent

3.   The maximum size for any screen shall be [_____], the average size of any page shall be[_____] to minimize download time

4.   The Application shall not include any of the Developer's tools, either in object code and source code form, that the Developer has already developed or that the Developer independently develops or licenses from a third party

E. Platform RequiremenTS.

The Application provided by the Developer to the Company shall be compatible with the following mobile devices: [INSERT MOBILE DEVICE(S)]; on the following operating systems: [INSERT OPERATING SYSTEMS]

F. COMPLETION SCHEDULE.

The schedule for completion of the Website (the "Schedule) and the responsibilities under the Agreement is detailed as follows:

 [INSERT DEVELOPMENT SCHEDULE]

G.FEES.

1.   Fixed fee of [$ AMOUNT TO BE PAID] upon the end of the Support Period

 [ADDITIONALLY, A DIFFERENT PAYMENT PLAN CAN BE IMPLEMENTED HERE]

H. PAYMENT SCHEDULE.

The Company agrees to pay to the Developer [$_____] of the estimated total upon [[TBD]], Developer [$_____] of the estimated total upon [[TBD]], Developer [$_____] of the estimated total upon [[TBD]], and [$_____] at the end of the Support Period.

By signing below, the Parties agree to comply with all of the requirements contained in this Exhibit A.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date first above written.

[Company Name]

COMPANY By:_____
Name:
Title:

[Developer Name]

DEVELOPER By: _____
Name:
Title:

Appendix C. Privacy Policy Model for Mobile Applications.

PRIVACY POLICY MODEL FOR MOBILE APPLICATIONS
This privacy policy governs your use of the software application Study Master© ("Application") for mobile devices that was created by [DEVELOPER COMPANY NAME]. The Application is a basic time and task management application with game functionality, designed for use in an educational setting.

What information does the Application obtain and how is it used?
User Provided Information
The Application obtains the information you provide when you download and register the Application. Registration with us is optional. However, please keep in mind that you may not be able to use some of the features offered by the Application unless you register with us.

When you register with us and use the Application, you generally provide (a) your name, email address, age, user name, password and other registration information; (b) transaction-related information, such as when you make purchases, respond to any offers, or download or use applications from us; (c) information you provide us when you contact us for help; (d) credit card information for purchase and use of the Application, and; (e) information you enter into our system when using the Application, such as contact information and project management information.
We may also use the information you provided us to contact your from time to time to provide you with important information, required notices and marketing promotions.
Automatically Collected Information

In addition, the Application may collect certain information automatically, including, but not limited to, the type of mobile device you use, your mobile devices unique device ID, the IP address of your mobile device, your mobile operating system, the type of mobile Internet browsers you use, and information about the way you use the Application.

Does the Application collect precise real time location information of the device?
This Application does not collect precise information about the location of your mobile device.

Do third parties see and/or have access to information obtained by the Application?
Only aggregated, anonymized data is periodically transmitted to external services to help us improve the Application and our service. We will share your information with third parties only in the ways that are described in this privacy statement.
We may disclose User Provided and Automatically Collected Information:
as required by law, such as to comply with a subpoena, or similar legal process;
when we believe in good faith that disclosure is necessary to protect our rights, protect your safety or the safety of others, investigate fraud, or respond to a government request;
with our trusted services providers who work on our behalf, do not have an independent use of the information we disclose to them, and have agreed to adhere to the rules set forth in this privacy statement.
if [DEVELOPER COMPANY NAME] is involved in a merger, acquisition, or sale of all or a portion of its assets, you will be notified via email and/or a prominent notice on our Web site of any change in ownership or uses of this information, as well as any choices you may have regarding this information.

What are my opt-out rights?
You can stop all collection of information by the Application easily by uninstalling the Application. You may use the standard uninstall processes as may be available as part of your mobile device or via the mobile application marketplace or network. You can also request to opt-out via email, at [PRIVACY@APPLICATIONSITE.COM].

Data Retention Policy, Managing Your Information
We will retain User Provided data for as long as you use the Application and for a reasonable time thereafter. We will retain Automatically Collected information for up to 24 months and thereafter may store it in aggregate. If you'd like us to delete User Provided Data that you have provided via the Application, please contact us at privacy@applicationsite.com and we will respond in a reasonable time. Please note that some or all of the User Provided Data may be required in order for the Application to function properly.

Children
We do not use the Application to knowingly solicit data from or market to children under the age of 13. If a parent or guardian becomes aware that his or her child has provided us with information without their consent, he or she should contact us at privacy@applicationsite.com. We will delete such information from our files within a reasonable time.

Security
We are concerned about safeguarding the confidentiality of your information. We provide physical, electronic, and procedural safeguards to protect information we process and maintain. For example, we limit access to this information to authorized employees and contractors who need to know that information in order to operate, develop or improve our Application. Please be aware that, although we endeavor provide reasonable security for information we process and maintain, no security system can prevent all potential security breaches.

Changes
This Privacy Policy may be updated from time to time for any reason. We will notify you of any changes to our Privacy Policy by posting the new Privacy Policy here and informing you via email or text message. You are advised to consult this Privacy Policy regularly for any changes, as continued use is deemed approval of all changes. You can check the history of this policy by clicking here.

Your Consent
By using the Application, you are consenting to our processing of your information as set forth in this Privacy Policy now and as amended by us. "Processing," means using cookies on a computer/hand held device or using or touching information in any way, including, but not limited to, collecting, storing, deleting, using, combining and disclosing information, all of which activities will take place in the United States. If you reside outside the United States your information will be transferred, processed and stored there under United States privacy standards.

Contact us
If you have any questions regarding privacy while using the Application, or have questions about our practices, please contact us via email at privacy@applicationsite.com.

METRIC UNIT CONVERSIONS

When You Know:	Multiply By:	To Find:
Length and Distance		
inches	2.5400	centimeters
feet	.3048	meters
yards	.9144	meters
miles	1.6093	kilometers
millimeters	.0394	inches
centimeters	.3937	inches
meters	3.2808	feet
meters	1.0936	yards
kilometers	.6214	miles
Surface or Area		
square feet	.0929	square meters
square yards	.8361	square meters
square miles	2.5900	square kilometers
square kilometers	.3861	square miles
hectares	2.4710	acres
Volume and Capacity (Liquid)		
pints (U.S.)	.4732	liters
quarts (U.S.)	.9463	liters
gallons (U.S.)	3.7853	liters
liters	2.1134	pints (U.S.)
liters	1.0567	quarts (U.S.)
liters	.2642	gallons (U.S.)
Weight and Mass		
ounces	28.3495	grams
pounds	.4536	kilograms
short tons	.9072	metric tons
kilograms	2.2046	pounds
metric tons	1.1023	short tons

Temperature
To convert Fahrenheit (F°) to Celsius (C°):
subtract 32, multiply by 5, and then divide by 9 or
°C = (°F - 32) ÷ 1.8.

To convert Celsius (C°) to Fahrenheit (F°):
multiply by 9, divide by 5, and then add 32 or
°F = (°C × 1.8) + 32.

FRACTIONS, DECIMALS, PERCENTAGES

$\frac{3}{5}$ — 3 - numerator, 5 - denominator

To **add** or **subtract** different fractions, first find the lowest common denominator:

$$\frac{1}{3} + \frac{2}{5} = \frac{5}{15} + \frac{6}{15} = \frac{11}{15}$$

To **multiply**:

$$\frac{1}{3} \times \frac{2}{5} = \frac{1 \times 2}{3 \times 5} = \frac{2}{15}$$

To **divide**, multiply the first fraction with the reciprocal of the second:

$$\frac{2}{3} \div \frac{1}{6} = \frac{2}{3} \times \frac{6}{1} = 4$$

FRACTION	DECIMAL	PERCENT
1/16	0.0625	6.25%
1/8	0.125	12.5%
3/16	0.1875	18.75%
1/4	0.25	25.0%
5/16	0.3125	31.25%
1/3	0.3333	33.33%
3/8	0.375	37.5%
1/2	0.5	50.0%
9/16	0.5625	56.25%
5/8	0.625	62.5%
2/3	0.6666	66.66%
3/4	0.75	75.0%
13/16	0.8125	81.25%
7/8	0.875	87.5%
1	1.0	100.0%

Decimals and Percent
To write a decimal for a percent, move the decimal point two places to the left. Omit the percent sign.

15% = .15 = 0.15   22.6% = .226 = 0.226

To write a percent for a decimal, move the decimal point two places to the right. Add the percent sign.

0.15 = .15 = 15%   0.226 = .226 = 22.6%

MULTIPLICATION CHART

	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

PUNCTUATION

Use a period at the end of a declarative sentence.
EXAMPLE: We went to see the Tulip Festival in Lynden.

Also use a period at the end of an imperative sentence that does not express strong emotion.
EXAMPLE: Open the door.

Use a question mark after an interrogative sentence.
EXAMPLE: Where will we go for our field trip?

Use an exclamation mark after a sentence that expresses surprise or strong emotion.
EXAMPLE: Rodney looks just great!

Use a comma to separate words and phrases in a series.
EXAMPLE: Al Smith has goats, some cows, and a pair of llamas.

Use a semicolon when a conjunction is omitted; it indicates a greater degree of separation than a comma.
EXAMPLE: The trail was steep and rocky; the wind was savage.

Use a colon to start a list or to formally introduce a statement.
EXAMPLE: She met three friends: Pam, Bev, and Joe.

Use double quotation marks around a direct quotation.
EXAMPLE: He said, "I am very happy."

Use an apostrophe in a contraction, as in it's (for it is), or to show possession, as in Dirk's dog.

SPELLING RULES

i before e except after c, or when sounded as a as in neighbor and weigh.

When a word ends in more than one consonant, do not double the final consonant.
EXAMPLE: frown   frowned   frowning
         help   helped   helping

When a word ends in soft ce or ge, keep the e before able and ous.
EXAMPLE: peace   peaceable
         courage courageous

When a verb ends in ie, change the ie to y before adding ing.
EXAMPLE: tie   tying   (tied!)