Software Requirements Specification

for

First Generation

Version 1.0 approved

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Revision History

Name	Date	Reason For Changes	Version
Initial Draft	12/8/2017	No changes	1.0
Second Draft	4/14/18	Changes in requirements and design	2.0

1. Introduction

1.1 Purpose

This document contains several viable resources to aid the details of the software requirements of the game. The purpose is to show details of the products inner and outer dynamic stability for version 1 of our system.

1.2 Intended Audience and Reading Suggestions

This document is for developers, testers, and users to get an outline of the general progression of a program evaluation. A user might be interested in the introduction and overall description of the game. Developers might be more attentive to the external interface requirements and testers might be more attentive to the requirements specifications and other nonfunctional requirements.

1.3 Product Scope

The name of our product is called First Generation. Our game is to assist first generation students in helping their way through their first year of college by accumulating and/or losing player credits/stats through interactions with non-playable characters and side-quests before the timer ends. It will be used on the mobile phone once released and the benefits include providing college students a more enjoyable experience throughout their first year of college. The goal is to create a healthy and positive mindset for students while also creating an enjoyable environment for them to interact with.

1.4 Definitions, Acronyms, and Abbreviations

[SEE Appendix A: Glossary - <Pg. 20>]

1.5 References

No references were used.

2. Overall Description

The First Generation project is a story based RPG mobile game where the player takes on the role of a college student who comes across challenges most common to first generation students. The player will have to make decisions that affects the campus and other NPCs relationships with the player, and the player itself. While attempting to balance the challenges one may face as a First generation student, the game will focus around balancing a college life and resolving conflicts to address and improve current flaws in the educational system. The game takes place over a length of 14, 5-day in-game weeks as the full progression of the student's 1st semester experience in college. A user will interact with the game by tapping the screen to move the player, to interact with other students(NPCs) throughout the game, and to interact with the UI (User Interface). The users main input for the mobile platform will be the tapping gesture. The game will allow the user to save their game and continue the game from their previous gameplay if they wish to continue from their previous saved game. The user will have access any information regarding the current state of the game, player or quests. The game will target the Android platform and the iOS platform in order to make the mobile game more accessible to all of our audience.

2.1 Product Perspective

The First Generation Mobile Game will implement a similar design to an existing game called “Harvest Moon” in combination with gameplay resembling an Android game called “College Days”. The user will get to move around the campus in a top down view focused around the main player like “Harvest Moon” and interact with other NPCs in a dialogue system like “College Days”.

This game differs from both of the previously mentioned games in regards to the content of the game. There is an in game timer that starts from the beginning of the game as soon as the player enter the name. The game simulates a college experience from the perspective of a first generation student and allows the player to progress throughout the game making decisions that consequently affect other parts of the story. The timer will also be stop when there is an interaction with the npc, such as conversations. The player can decide to help other students by finding a solution to a variety of conflicts or go it alone and focus on an academic career while facing the day to day struggles most common among first generation students. This game

experience introduces our audience to the idea of higher education and how to overcome some of the challenges they could face, someone in their family is facing or friends that can be currently going through a similar experience. A motivation that drives the development of the game is the need for resources to guide and show first generation college students and students in general how to approach certain problems through decision making and outcomes that can have negative consequences or positive affect the player. It also has the Health Points that can allow the player to buy food when the health points runs low and can interact with non player character only when the health points are available. The game can serve as an initial resource and a tool to introduce dialogue regarding our audience's own future and their education. The replayability allows the player to role play as any character they choose to be, in the end it is up to the player's to make a name for themselves.

2.2 Product Functions

- 3D Animation Controllers
    - This will control when specific animations on a model should be triggered in regards to the game or in response to the main player's interaction.
- NPC Artificial Intelligence
    - This will give life to NPCs to wander and react to player interactions and the current status of the player as well.
    - It will also also help player by saying something helpful.
- Scene Management
    - This will connect the different environment areas to load the proper environment used in the game into a seamless gameplay experience.
- Mini Map
    - This encapsulates the campus map to provide easier access to the game environment, including NPCs and quests that are within the vicinity of the Player.
    - The function of the mini map will help player to find the location of the building or the NPCs.
- Player Movement
    - This will accept user input to control the main player around the campus map and inside the Art building, Financial Aid office, etc.
    - It can be control through touching the screen of the device, such as the smartphones or tablets.
- Data Manager

    - This will allow the Player to continue from previous game play by loading data from previous saved states. This module will also allow players to save their current state for later use.
- User Interface(UI)/ Heads Up Display
    - This will allow the player to interact with in-game Information, quests that are currently active, and change other settings for the game.
- Dialogue Manager
    - This will make sure the appropriate dialogue is loaded depending on the progress of the game.
- Audio Manager
    - This will ensure that the audio dynamically loads different clips of sound and music depending on the mood and status of the player as well as the current progress of the game.

2.3 User Classes and Characteristics

The RPG mobile game will be operated on a mobile device. It will be compatible on mobile phones and tablets running the Android operating system and mobile phones and tablets running iOS.

2.4 Operating Environment

The RPG mobile game will be operated on a mobile device. It will be compatible on mobile phones and tablets running the Android operating system and mobile phones and tablets running iOS.

2.5 Design and Implementation Constraints

- The file format type of 3D
    - .fbx, , .dae, .3ds, .dxf, .obj, .skp.
- The file format type of Image
    - BPM, TIF, TGA, JPG, PSD, PNG
- For iphone, it requires to have IOS 7.0 or higher.
- For android, it requires to have AOS 4.1 or later.

2.6 User Documentation

The document that will be delivered along with this software will be provided at the end of the final game release. The tutorials will be given on start of the game, so that the users will get the basic idea on how the game will be played throughout. For example, the storyline and the choosing the characters will allow user to have basic idea.

2.7 Assumptions and Dependencies

- In the future of this rpg game, the future multiplayer will be added to the game.
- Number of players will be assumed to be added.
- The user might able to track their player through the GPS system on their smartphone.
- The options where the users can share by going to the twitter and the facebook.

2.8 Apportioning of Requirements

The following list are components that were implemented through iterative and incremental parts of the game.

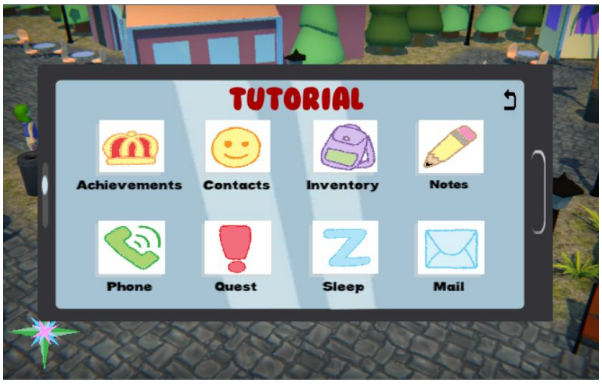
- Splash Screens
- Player Navigation System
- Player Selection System
- Environment and Level Design
- Player Manager
- Camera System
- NPCs Animation/Navigation System
- NPCs Dialogue System
- MiniMap System
- Music and SoundFX
- Heads-Up Display

3. External Interface Requirements

3.1 User Interfaces

The design of the buttons in the UI are meant to be simple, colorful, and bold. Due to the small screen resolution of the phone, the buttons and UI need to hit the balance between big enough to press easily, but not take up the entire screen.

	The Starting Menu shows a simple, solid design with big buttons to navigate through the new game setup process.
	In the standard world map view, there is a player information box in the top left corner showing player stats like stamina, money, and name. The right side of the screen has credits bar. In the lower corner there is a phone icon that will open the menu.

	The phone menu screen will cover the whole screen with big buttons, each with an icon and labels, to open up other menu screens within the phone.
	The compass button activates the Mini Map, which allows for an overhead view of the map. The player is represented by a blue ball and the NPCs are represented by red.

3.2 Hardware Interfaces

This software does not interact with any external hardware besides the phone itself.

3.3 Software Interfaces

This software is self-contained and does not need to interact with other software.

3.4 Communications Interfaces

This software is self-contained and does not connect to any network. There are plans for the future of the software where data and interactions will be done over the internet.

4. Requirements Specification

4.1 Functional Requirements

Requirements Related to the System	
Requirement No.	Requirement Description
4.1.0.1	The system shall respond to touch screen inputs.
4.1.0.2	The system shall display 2D graphics.
4.1.0.3	The system shall display 3D graphics.
4.1.0.4	The system shall run on IOS.
4.1.0.5	The system shall run on AOS.
4.1.0.6	This system shall play background music.
4.1.0.7	This system shall play sound effects.

Requirements Related to the Startup Module (SM)	
Requirement No.	Requirement Description
4.1.1.1	This module shall initialize all game data.
4.1.1.2	This module shall check if there is existing saved game data.

Requirements Related to the Main Menu Module (MMM)	
Requirement No.	Requirement Description
4.1.2.1	This module shall give the option to start a new game.

4.1.2.2	This module shall give the option to continue from where the player exited the game last.
4.1.2.3	This module shall allow the player to navigate between menu screens.
4.1.2.4	This module shall give the option to choose a low graphics quality.
4.1.2.5	This module shall give the option to choose a medium graphics quality.
4.1.2.6	This module shall give the option to choose a high graphics quality.
4.1.2.7	This module shall give the option to toggle music.
4.1.2.8	This module shall give the option to adjust music volume.
4.1.2.9	This module shall give the option to toggle sound effects.
4.1.2.10	This module shall give the option to adjust sound effects volume.
4.1.2.11	This module shall give the option to toggle vibration effects.
4.1.2.12	This module shall allow the player to select a player avatar upon starting a new game.
4.1.2.13	This module shall allow the player to enter a name for their player avatar.

Requirements Related to the Game Module (GM)	
Requirement No.	Requirement Description
4.1.3.1	This module shall keep track of the current game progress.
4.1.3.2	This module shall load the 3D open world map.
4.1.3.3	This module shall load the 3D player avatar.
4.1.3.4	This module shall load the 3D NPCs.
4.1.3.5	This module shall allow NPCs to move around the open world map.

4.1.3.6	This module shall display the player avatar from a top-down, angled view.
4.1.3.7	This module shall allow the player avatar to move around the open world map..
4.1.3.8	This module shall allow the player avatar to enter different rooms.
4.1.3.9	This module shall allow the player avatar to exit different rooms.
4.1.3.10	This module shall have a game timer.
4.1.3.11	This module shall pause the game timer during NPC interactions.
4.1.3.12	This module shall pause the game timer when the user exits the game module.
4.1.3.13	This module shall calculate the player’s score when the timer ends.
4.1.3.14	This module shall keep track of completed quests.
4.1.3.15	This module shall keep track of the player’s current stamina stat.
4.1.3.16	This module shall keep track of the player’s current money stat.
4.1.3.17	This module shall keep track of the player’s curren credits stat.
4.1.3.18	This module shall keep track of player’s buffs/power-ups.
4.1.3.19	This module shall keep track of player’s achievements.
4.1.3.20	This module shall display the in-game HUD.
4.1.3.21	This module shall display the player’s name as part of the HUD.
4.1.3.22	This module shall display the player’s 2D sprite icon as part of the HUD.
4.1.3.23	This module shall display the player’s current stamina as part of the HUD.
4.1.3.24	This module shall display the player’s current money as part of the HUD.
4.1.3.25	This module shall display a cell phone as part of the HUD.
4.1.3.26	This module shall display a minimap icon as part of the HUD.

4.1.3.27	This module shall display a credits bar as part of the HUD.
4.1.3.28	This module shall allow the user to toggle the minimap display.
4.1.3.29	This module shall allow the player to initiate dialogue with NPCs.
4.1.3.30	This module shall display the 2D player sprite upon NPC dialogue initiation.
4.1.3.31	This module shall display the 2D NPC sprite upon NPC dialogue initiation.
4.1.3.32	This module shall display 2D speech bubble sprites upon NPC dialogue initiation.
4.1.3.33	This module shall allow the user to interact with NPCs.
4.1.3.34	This module shall generate NPC responses to the user.
4.1.3.35	This module shall allow the user to access the cell phone menu.
4.1.3.36	This module should allow the player to check quest progress.
4.1.3.37	This module shall allow the user to access the settings menu.
4.1.3.38	This module shall give the option to choose a low graphics quality.
4.1.3.39	This module shall give the option to choose a medium graphics quality.
4.1.3.40	This module shall give the option to choose a high graphics quality.
4.1.3.41	This module shall give the option to toggle music.
4.1.3.42	This module shall give the option to adjust music volume.
4.1.3.43	This module shall give the option to toggle sound effects.
4.1.3.44	This module shall give the option to adjust sound effects volume.
4.1.3.45	This module shall give the option to toggle vibration effects.
4.1.3.46	This module shall allow the user to return to the main menu.

4.2 External Interface Requirements

This software does not interact with any external hardware. All inputs and outputs are part of the mobile device itself.

Device	**Operating System**	**Input**	**Output**	**Screen Resolution**
Mobile Phone	IOS / AOS	Touch Screen Input	Graphics Display / Vibrations	960 x 640

4.3 Logical Database Requirements

The software will not be connected to a database. All game data and information will be stored within the software itself.

4.4 Design Constraints

3D Model File Restrictions	**Image File Restrictions**	**Audio File Restrictions**	**Operating System Restrictions**
.fbx	.bpm	.wav	IOS 7.0 or later
.dae	.tif	.mp3	AOS 4.1 or later
.3ds	.tga	.ogg	
.dxf	.jpg	.aif	
.obj	.psd	.mod	
.skp	.png	.it	
		.s3m	

		.xm	

5. Other Nonfunctional Requirements

5.1 Performance Requirements

The First Generation App (FGA) Shall run on the latest version of the Android Operating System (AOS). FGA shall run on the latest version of the iPhone Operating System (iOS). FGA Shall run at a consistent resolution of 720p on AOS. FGA Shall run at a consistent resolution of 720p on iOS.

5.2 Safety Requirements

Safe operation of the mobile device.

5.3 Security Requirements

FG Shall not connect to the internet. FG shall not Connect to any external sites. FG shall not require an email to use. FG shall not require a password to use. FG shall not collect any personal information when used.

5.4 Software Quality Attributes

FG shall give the user an authentic first year college experience through its two hour gameplay time. FG shall give the user choices so no one play is the same. FG shall be available to users all over the U.S. FG shall be tested rigorously to work on all the latest AOS devices. FG shall be tested rigorously to work on the latest iOS devices. FG Shall have aesthetically pleasing are. FG shall have aurally pleasing music.

5.5 Business Rules

FG shall be available free of charge. FG shall have no in-app purchases (IAP). FG shall have no predatory Micro Transactions.

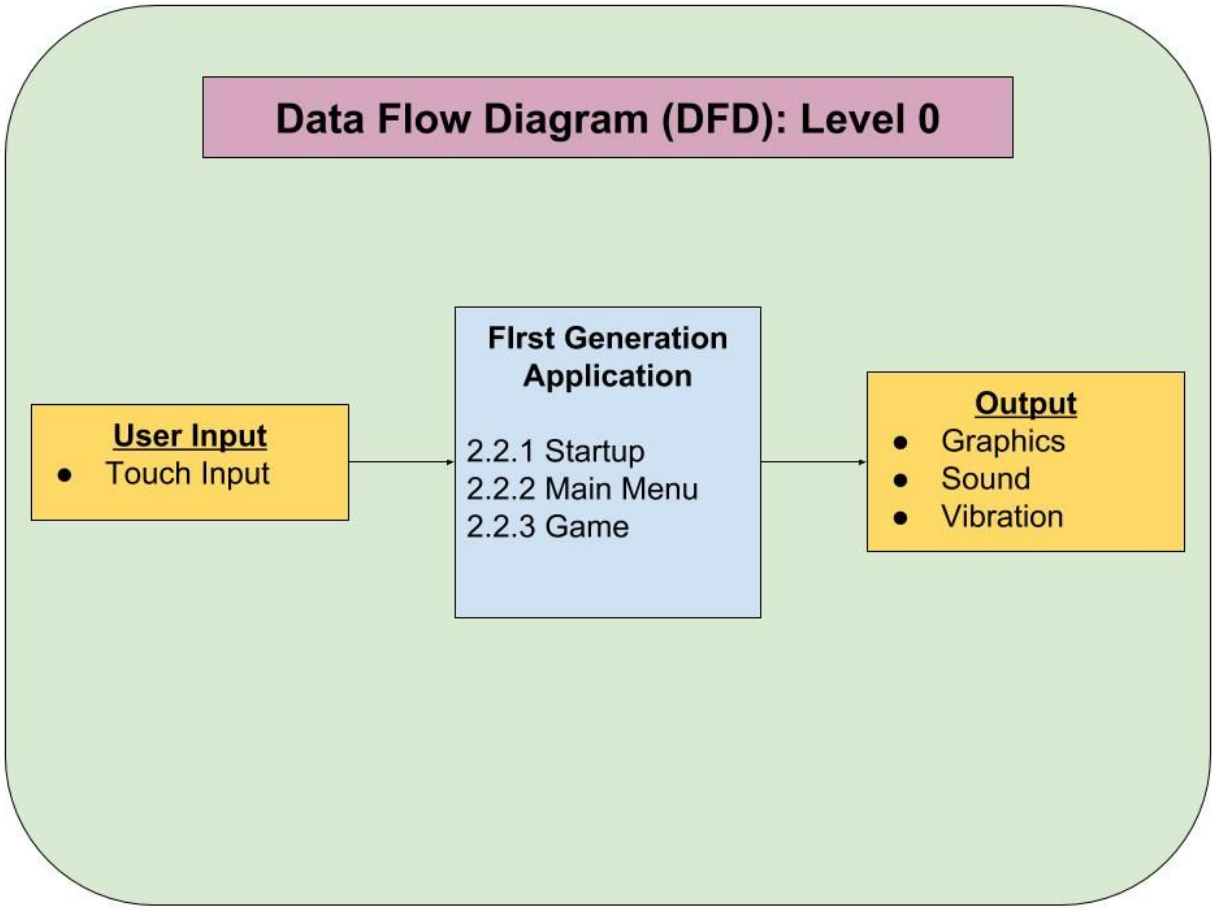
6. Other Requirements

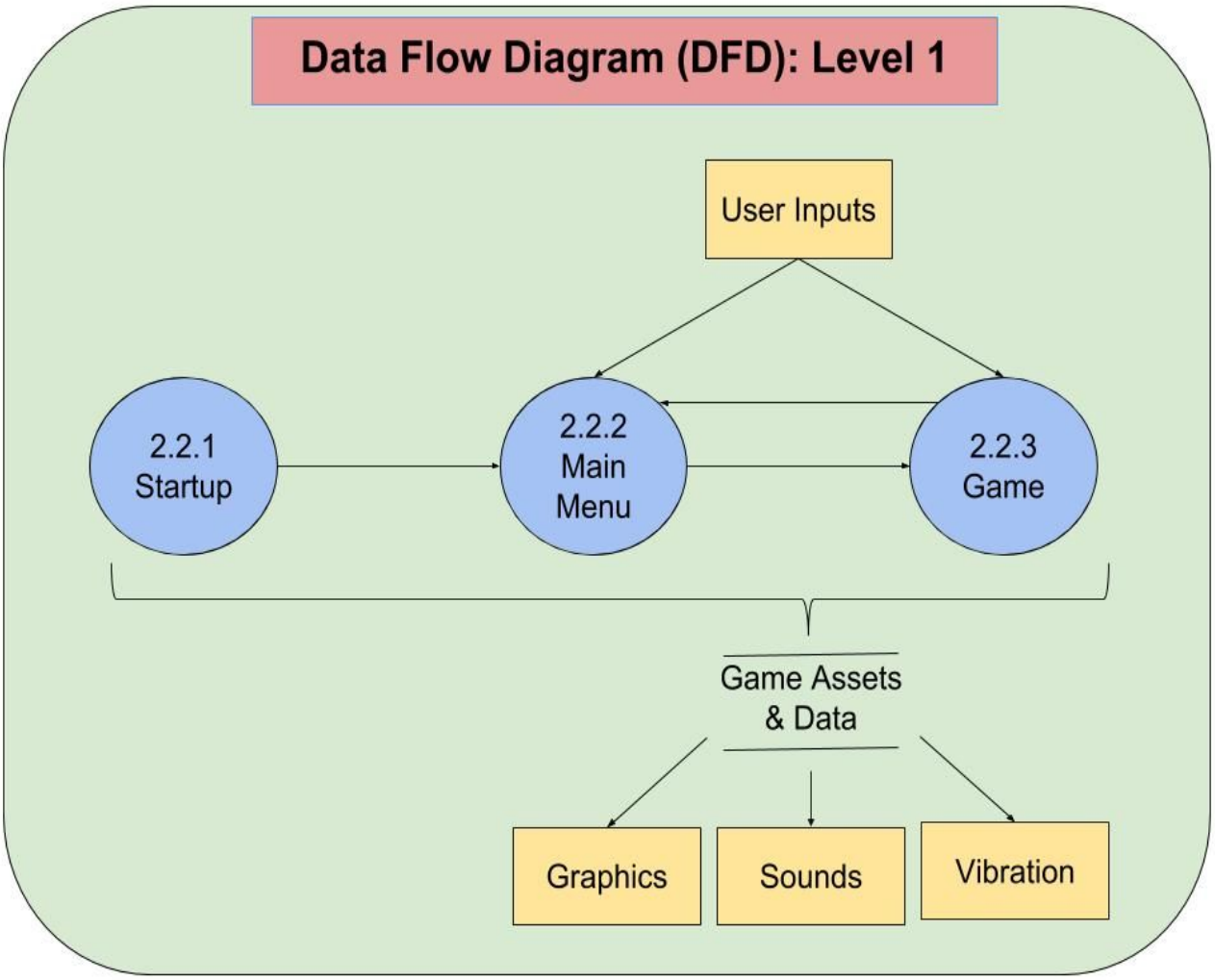
Other Requirements	
Requirement No.	Requirement Description
6.1	3D models will be provided by the CSULA art department.
6.2	2D sprite images will be provided by the CSULA art department.
6.3	Original music will be composed for this software.

Appendix A: Glossary

Abbreviation	**Definition**
2D	Two Dimensional
3D	Three Dimensional
AOS	Android Operating System
FG	First Generation
GM	Game Module
HUD	Heads-Up Display
IAP	In-Application Purchase
IOS	iPhone Operating System
MMM	Main Menu Module
MT	Micro Transactions
NPC	Non-Playable Character
SM	Startup Module
UI	User Interface

Appendix B: Analysis Models




Data Flow Diagram (DFD): Level 1
User Inputs
2.2.1
Startup
2.2.2
Main
Menu
2.2.3
Game
Game Assets
& Data
Graphics
Sounds
Vibration

Appendix C: To Be Determined List