

**<Game Title>**

***An iOS Fitness RPG***

A Major Qualifying Project Report

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**Abstract**

Through the use of the iPhone’s new M7 chip, in conjunction with iBeacon Bluetooth devices, we created an iPhone role-playing game that is meant to encourage players to have a healthier lifestyle. The player engages in a real world role-playing game experience where the way they exercise in reality impacts their digital avatar’s traits and abilities. The goal of this game is to encourage exercise through in-game benefits to the player’s character, with the hope of eventually changing the player’s lifestyle to incorporate more exercise.

**Acknowledgements**

Our project could not have been completed without assistance from the following Ritsumeikan University students and faculty:

* Professor Noma:
* Wakao Asuka: Assisted us with learning the Xcode IDE as well as the iBeacon device to iPhone connection process.
* Kohno Hitomi: Responsible for our game’s art assets, she played a vital role in making our game have the look and feel we desired.

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**Introduction**

**Project Proposal and Purpose:**

The original idea for the project came from our (Maxwell Perlman’s and Stefan Alexander’s) love of traditional role-playing games and Japanese role-playing games. Our original proposal was the following:

*Through the use of phone based GPS technology, players can form a party of people in order to complete quests and defeat monsters. Players will be able to see the characters of those located close to them and are able to group together in order to become stronger. Providing a method for players to experience a Dungeons and Dragons level of fantasy immersion, possibly including a way for players to design adventures for their friends, while connecting it to real-world locations and objects could lead to a very deep immersive fantasy experience.*

Professor Noma then proposed that we adapt our idea to be a game that encourages the players to exercise and become healthier. Additionally, Professor Noma then stated that he wanted us to use iBeacon Bluetooth devices in our project in some respect.

After discussing these ideas form Professor Noma, we adapted our ideas in order to include these proposals. These proposals had a very large impact on the final vision we had for the game. First, we realized that we would have to design a way for the exercise habits of players to impact their avatar. Secondly, we had determined exactly how we would design multiplayer gameplay, thanks to the iBeacon devices. Once we had determined these things, we began the development of our game.

The following section will cover the entire development of the game from start to finish. Simultaneously with development, design decisions, both high and low level, were being made.

**Gameplay Inspirations and Related Works**

**RPG & JRPG Genres**

Heavily inspired by the role-playing and Japanese role playing game genres, we quickly realized that we wanted the game to feature major elements from these genres most importantly a turn based combat system as well as elements of exploration. The following games in this genre were major inspirations for the games design: The Final Fantasy series, Bravely Default, etc.

**Ingress**

Ingress is an augmented reality multiplayer game. Players are divided into two teams (blue and green) and these teams compete to take over the world. Players use their cell phones in order to set up virtual towers and capture areas of the earth. Players try to increase the power and range of their own faction’s control of are while waging war on the opposing faction. Ingress was a major inspiration to us because of its excellent mapping of real world locations to meaningful in-game locations. However, there were many aspects of Ingress that we felt were poorly designed or did not encourage the behavior that should be adapted while engaging in a game that takes place in the real world. Our goal is to provide an experience with a similar use of real world locations while at the same time not allowing this type of behavior during gameplay, specifically playing the game while driving.

**Dungeons and Dragons**

Dungeons and Dragons is a tabletop role-playing game that is played by groups of four to eight people. Normally featuring very limited physical resources; typically a player has nothing but a set of dice and sheet of paper with their character’s information. Guided by a non-playing person, known as a dungeon master, players band together to travel through fantasy worlds and dungeons to fight monsters, discover treasure, and even engage in conversation with non-player characters. We found inspiration through Dungeons and Dragons due to high level of immersion, to those who enjoy it, its high level of cooperative play, extremely deep and dynamic character creation mechanisms, and dynamic difficulty (set forth by both the game and the dungeon master). One of the major downsides to a game such as Dungeons and Dragons, which our game hopes to avoid, is the sedentariness of the players of the game. Typical a session of Dungeons and Dragons lasts between two and six hours, almost all of which consist of the players sitting down. Although our game will not provide the deep storytelling experience that Dungeons and Dragons does, we believe that due to the requirement of exercise for the progression of gameplay, our game will be able to achieve a high level of immersion.

**Find Mii**

Find Mii is a game built into the Nintendo 3DS handheld system. By leaving their system’s network on and keeping the system in sleep mode, a player carrying their system around with them during their day-to-day activities can collect other players. They can then use these players in order to defeat monsters and collect treasure, which can be seen by other players. We found Fine Mii to be a great inspiration it’s both its multiplayer gameplay mechanics as well as its simplicity. The only factor of Find Mii that we wish to avoid in our game is that the game does not actively encourage the player actually going out into the real world to play the game; players typically only play the game at the end of the day after having collected people.

**Team Members and Responsibilities**

Maxwell Perlman:

Stefan Alexander:

**Development**

**Design**

**Initial Design Decisions**

**Understanding Our Audience**

The first thing we had to define before we began the design and development processes was for what audience we are developing our game. Who would be downloading our game: young children, teenagers, college students, adults, or the elderly? Why are the players playing it: a desire for a deep gameplay experience, an enjoyment for augmented reality games, encouragement to begin exercising and walking more? We quickly realized that our target audience is young adults and adults who are looking for something to entertain them while they exercise. Some are more interested in the gameplay while others are looking for a gamified version of a pedometer. Understanding this, along with our game being targeted, initially, towards Japan and eventually the US, was the first major step in beginning the design and development process.

**Japanese Audience**

One of the first real decisions made was to develop this game for iOS. In recent history, iPhone games have become exceedingly popular, especially amongst people in our target audience, ages sixteen to people in their mid forties. That, combined with the omnipresence of iPhones on a national scale was more than enough to inform our decision and push towards developing for iOS.

We then took a look at both the American and Japanese app stores to gain an understanding of the popular applications as well as the degree of the presence of games in both cultures. We found that in the Japanese app store twenty-nine of the top thirty apps were classified as games. And in terms of the American market, we found that twenty-two of the top thirty apps were games. Combining this information with information gained from this report (<http://blog.appannie.com/japan-spotlight-revenue-inflection-point/>) in conjunction with the information we gathered, showing that of the top ten games in the Japanese app store, seven of them were role-playing games, helped to confirm that we were indeed creating a game for the correct audience.

Soon after deciding to develop for iOS we encountered an issue: How do we plan to store a player’s data? Do we make the data transferable to other devices or do we restrict it to a single device and not allow a person with multiple devices to use both for the game? We decided that players should be able to play the game on as many devices as possible, however this means that we need to store all of a players data on either Apple’s server or our own.

Our first instinct was to use the Apple provided service called Game Center to store our games data and maintain all multiplayer gameplay. However, due to the limited access to Apple services that we have as students, we were unable to access this service. We were then forced to brainstorm other solutions to this problem. In the end we wound up with two possibilities. We had decided between storing an email address for each player as well as a password, forcing them to login each time they want to play the game or using a different native iOS service called accounts. Any i-device is capable of storing account information with the following social media services: Twitter, Facebook, Sina Weibo, and Tencent Weibo. Due to the ubiquity of social media in Japan and America, namely Twitter and Facebook respectively, we decided that we would use this accounts framework to store our players data on our server. One of the benefits of this is the ability for the player to login using different i-devices with the same account.

**Violent vs. Non-Violent Gameplay**

Once having decided on the genre of our game, we had another important decision to make: was violent, combat based, gameplay acceptable for the audience we were to design the game for? To decide this, we looked to the most popular role-playing games in the Japanese app store. Of the 7 role-playing games in the top ten apps in Japan, five of them featured combat-based gameplay, sometimes abstracted to appear as card game or pinball, while only two did not. Although this is a small sample, we decided to follow the trend and determined that combat-based gameplay was acceptable, especially in light of the fact that our target audience is not young children.

**Multiple Characters Per Player**

Another important decision that had to be made about the gameplay was whether or not a player was allowed to have multiple characters. Due to the nature of how we are storing player information, based on social media accounts, we decided that we would not provide an inherent way for a player to create a “second” character, however if a player is so inclined, they are able to use a different social media account associated with their device to do so. We found this method to be most effective for gameplay, seeing that it is highly unlikely that a player will want to create a new character before their original character has reached a level that the player considers complete; allowing a player the opportunity to create a new character, but not highlighting it to players, most of whom have no interest in a second character.

**Managing Expectations**

Designing and developing a game in the role-playing or Japanese role-playing game genres comes with a lot of baggage. Players have many expected tropes and commonalities amongst these types of games. Consisting of complex combat systems, thousands of items, hundreds of enemies, complicated skill trees, and intricately designed worlds and story; role-playing games are amongst the most complex games due the shear magnitude of content these games typically feature. However, due to the audience we are targeting, many of these tropes are stand only to hinder our design. We had to acknowledge the tropes and evaluate which served to benefit our design and which tropes served to only make our design needlessly complex and lose our games identity if we conformed to them.

**Original Design Intention and Simplification**

This section serves to explain the evolution of our design; from an overly complex cliché filled design to a simplified one that keeps in mind the stereotypes associated with the genre but offers a new perspective on them.

**Design v1.0**

Our initial design proposal, completely ignoring all technical elements, can be broken down into the following systems:

* Class System: When a player first created their character, they would select from a number of different classes. This selection would have determined both the way their character’s traits evolve and the abilities, both in and outside of combat. Additionally, a character’s class would determine the type of weapons and equipment the character could use.
* Leveling System: As a player played the game, encountering and defeating monsters, their character would grow. Additionally, a character would be able to grow based on their exercise habits.
* Ability System: Consisting of both combat and non-combat based abilities, a character’s class would have determined their abilities. New abilities would be unlocked as the player levels up.
* Trait System: Each player’s character would begin the game with a preset value for each of his or her characters traits. As the character would level up would be given a set number of points to assign to each of their traits. This would have provided the player with a large amount of control of exactly how their character fights.
* Rank System: As a way to encourage competition between players, there would have been a ranking system, keeping track of which player had taken the most steps total as well as their average steps per day. Players would have been able to receive special items to show off to other players if they achieved a specific rank, for example: a special equipment for walking a specific number of steps every day for a week.
* Equipment System: Players would be able to equip their character with numerous different types of equipment (such as armor, head-gear, a weapon, an accessory, etc.). This equipment would be able to grant the player trait value boosts as well as abilities. Additionally, some equipment would have been class dependent, where some classes can use or cannot use certain equipment.
* Combat System: Player would encounter randomly generated enemies based on their character’s level. Player would engage in turn based combat with the enemy until one of their health values reaches zero. If the player lost the fight, they would lose a small amount of their current level progress and f they won, they would gain a small towards their current level progression.
* iBeacon Locations: Through GPS positions, players would have been able to meet up at iBeacon locations, stored on our server and marked accordingly on the main map. At these locations, provided enough players are present, the players would have either discovered a special boss enemy or would have each received a special item.

**Simplification**

Needless to say, this initial design was overly complicated, too ambitions (especially due to our team’s lack of an assigned artist), and definitely not feasible to be done in 3 months by a team of 2 people. From here, the simplification process began.

The first major simplification to our proposal was the complete elimination of the class system. Although usually a cornerstone of role-playing games, the class system presented a challenge to create content that could not be met within the deadline. Not only would there have had to be a huge amount of content created, balancing the combat system to support this class system would have taken far too long to even truly be considered. Instead, we designed a simplified character evolution system that is dependent only upon the character’s trait values. This has a large impact on both the ability, trait, and equipment systems.

Soon after understanding the amount of content that would have had to be created for the equipment system, we realized that there was absolutely no way that we could support it; leading to the equipment system being cut. The reasoning behind this was that there was no way to test if it actually enhanced gameplay in a significant way without fully implementing it, which we were nervous to undertake.

After removing the class system, the ability system needed to be updated. We decided that in order to show a character growing, without a preset list of skills they would learn based on their class, that as a player put points into their trait values when leveling up, they would learn specific abilities. The other change to the ability system was the removal of non-combat abilities. We decided that these abilities were unnecessary and actually went against the vision we had for the game. We did not want to create a game where the player is constantly checking their phone for updates on their character’s status; the game is about exercising. The players should have to use their phone as little as possible, and non-combat abilities that are used on the map while the player walks around in the real world violates that vision.

**Gameplay Guide**

**Timeline**

**Produced Materials**

**Reference Materials**