Worcester Polytechnic Institute
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Project Proposal

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Abstract

Through the use of GPS and iBeacon technology, players will engage in a real world role-playing game experience. Through engaging and constant gameplay, players are encouraged to go out into the real world, exercise, and explore, searching for digital monsters to fight and treasure to discover. The technical aspects of this project, design decisions, and projected timeline of this project will be detailed below.

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Introduction

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Technical Aspects

Account Association

In order for players to play the game, they must associate one of their iPhones accounts with our game. iPhone devices automatically record accounts for popular social media applications (such as Facebook, Twitter, Tumblr, Instagram, etc.) as well as email accounts. This information is used by our server and serves as the players account id. Additional information is available in the Client-Server Model and Database section below.

iPhone and M7 Chip

Through the use of the newest iPhones M7 chip, which allows for background calculations to take place while the phone is locked (calculations such as pedometer step tracking, GPS location, etc.) players will be constantly playing the game, even if they are engaged in another task. The background calculations are integral to our gameplay.

iBeacon Devices

iBeacon devices are USB devices that can be powered by battery or plugged into a wall or machine. These devices emit a bluetooth signal to all nearby active bluetooth devices within a 10 meters. Through these I beacons, we are capable of setting up hotspot location where players can meet together in order to engage in cooperative gameplay. Additional information is available below in the combat subsection of the gameplay guide.

GPS

Through the use of the iPhones built in GPS tracking, we will be able to understand not only where our players are, but how far they traveled, how long it took them, and which other players are nearby. This allows us to tailor the players experience to their own walking habits. Additional information is available below in the leveling and traits subsection of the gameplay guide.

Client-Server Model and Database

Responsible for tracking all players locations and their information, as well as all sessions of iBeacon based enemies, treasure, and multiplayer combat, the database and server are essential to our games functionality. We will be using PHP, MySQL, and possibly other technologies such as Django and Python to handle the multiplayer combat system.

Languages and Development Environments

We are using the following languages and development environments for the production of our game. As needed, we will add additional technologies to this list.

Swift and Xcode 6.4

Our entire iPhone application is being coded in Apple's new language, Swift. While still a new language, it has all of the potential that Objective-C could have offered us. So far, we have had very few problems, none of which severe, in learning and converting code to Swift.

MySQL and phpMyAdmin

The database is using MySQL in conjunction with phpMyAdmin to keep out database organized and accessible. So far, all database related code has been problem free.

PHP

Our website, which is used to output our MySQL tables, as well as to show our databases contents is being coded in PHP. So far, all website related code as been problem free.

Inspirations and Related Works

Ingress: https://www.ingress.com/

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Dungeons and Dragons: http://www.wizards.com/dnd/

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Find Mii: http://nintendo.wikia.com/wiki/Find_Mii_(3DS)

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