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| Outbreak Smartphone App for iPhone |
| System Requirements |

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Introduction

This report contains a summary of the requirements for the Outbreak iPhone 3 application. The requirements document is intended to accurately describe the components of each part of our system. The document is formatted into two main groupings, functional and non-functional requirements. We describe component functions and define their behaviors and possible inputs/outputs in the functional requirements. Non-functional requirements will include system specifications that aren’t component functions.

# Functional Requirements

Functional requirements are grouped by system functionality, and are based on system behaviors. A functional requirement will define the behavior of a function and the inputs and outputs related with that function. Each functional requirement group represents a piece of the system that can be isolated and worked on.

The following scale is used to prioritize functional requirements:

* H-A: High Priority, required for system Architecture
* H: High priority requirements are critical to the system being operational
* M: Medium priority requirements denote system functionality that are required for deployment but are not critical for system operation.
* L: Low priority requirements are features we would like to see in our system but can be excluded

# Creation

This section details Disease customization and creation.

1. The system shall have a visual customizable virus(L)
   1. The system shall Take in multiple pieces for virus customization(2-5)(M)
   2. The system shall use bind points to attach limbs to the body(M)
   3. The system shall use direction vectors to orient limb position(M)
   4. The system shall render virus as one whole piece(M)
2. The system shall have point allocation for different symptoms(M)
   1. 100 points given to allocate between the two categories; zone and spread(M)
3. The system shall have two different virus types(M)
   1. The system shall have DNA and RNA viruses
   2. The system shall base days contagious on virus type
   3. The system shall base mutation on virus type(RNA only)
4. The system shall allow the user multiple viruses(M)
   1. The system will allow only one active virus at a time
   2. The system will store all unused viruses
   3. The system will allow virus deletion

# Offline Play

This section details the act of healing your caught viruses via a mini-game. It also contains the store for buying healing items with collected currency. It will be coded in native phone language for use of platform specific interfaces.

1. The system shall have an offline Slot Machine game to earn currency for the store(H)
   1. The system shall take tokens earned from online play to start the game
   2. The system shall reward the user with currency for completing game
2. The system shall have an offline mini-game to create vaccines for current infections(H)
   1. The system shall take ingredients bought from the store to use in the mini-game
   2. The system shall succeed or fail on creating a vaccine
3. The System Shall have a store which vends in game items(H)
   1. The store shall take currency earned from offline play
   2. The system shall display any user created vaccines for any active infections
   3. The store shall vend items
4. The system shall have an inventory linked to the user(H)
   1. The system shall use the inventory for currency storage
   2. The system shall use the inventory for item storage
   3. The system shall allow inventory upgrades via achievements

**Defenses**

This section outlines how the user builds up defenses to viruses. The user will be able to use vaccines to create immunities, and build anti-bodies by healing themselves of an infection.

1. The system shall allow user created vaccines(M)
   1. Vaccines are created from viruses from the offline mini-game
   2. User will be able to sell the vaccine through online store
2. The system will use vaccines to give user immunities(M)
   1. Immunities will block viruses with similar stats (name doesn’t matter)
3. The system shall create anti-bodies after curing an infection(M)
   1. Anti-bodies are acquired after curing an infection
   2. Anti-bodies are a built in immunity

# Online Play (Infection)

This section details the online infection mode which encompasses the spread of your virus. Virus’ can be spread through hot spots and instant transfers. User area is defined by a 25ft range via geo-location data.

1. The system will have Zone spread methods of infection (hot spots)(H-A)
   1. The system shall lay a hotspot when a user stays in the same area for 5-10 minutes based on attributes
   2. The system shall keep the hotspot active for 5, 10, or 15 minutes based on disease stats after the infected user leaves the hotspot
   3. The system shall try to infect all phones within range through zone hotspots every 30s-1m based on attributes
   4. The system shall record all successful zone infections to database
2. The system will have an Instant Spread method of infection(H-A)
   1. The system shall gather all devices in the Spread range
   2. The system shall try to infect all phones within spread range
   3. The system shall record all successful infections on the database

# Achievements

Achievements are earned through use of the game, they provide the user with rewards as incentives to complete challenges

1. The system shall reward the user for online achievements (M)
   1. The system shall base online achievements on Infecting of others
   2. The system shall base online achievements on Play time
   3. The system shall reward online achievement completion with offensive virus features
2. The system shall reward the user for offline achievements (M)
   1. The system shall base offline achievements on mini-game score
   2. The system shall reward offline achievement completion with defensive features
3. The system shall reward the user for Social rewards(L)
   1. The system shall have promotional codes offered on social networking sites
   2. The system shall reward promotional codes with customizable(visual) pieces

# Database

This section details our back-end database to our web-server. The database will communicate with the phone through the web-server and the phone will only sync data during activation and de-activation of the online mode.

1. The system shall sync data between phone and server when online play is activated(H)
   1. The system shall upload user infected status
   2. The system shall upload completed offline achievements
2. The system shall sync data between phone and server when online play is de-activated(H)
   1. The system will sync the number of successful infections
   2. The system will sync the user infected status
   3. The system will sync tokens earned during online play
3. The system shall allow the user account creation(H-A)
   1. The system will have unique names for accounts

# Non-Functional Requirements

This area encompasses all of the architecture specifications of the system. It will denote system implementation and platform specific interfaces. This area will not include any behavior of the system.

# Platform

1. The system shall support a touchscreen interface
2. The system shall have use Xcode to launch apps to iPhone
3. The system shall be localized to the iPhone 4S platform

# Performance

1. The system shall not use more than 1GB of data transfer in 1 month of use

# Communication

1. The system shall use Geo-Location GPS data for tracking
2. The system shall use 3G/4G/Wifi cell services for online play