|  |
| --- |
| Software Requirements Specification |
| The Dungeon Explorer |
|  |

10/21/2016

1. **Introduction**

This section contains an overview of the SRS. Also, this section gives an overview of the software system.

**1.1. Purpose**

The Purpose of this document is to give a detailed overview of the Dungeon Master (RPG).

It will convey information clearly and directly for the software development team.

* 1. **. Scope**

The scope of this project is to develop a complete 2D Role Playing (RPG) game. This includes creating all graphical user interfaces, Game algorithms, and graphical imagery. The game takes place in a dungeon environment, with text-based progression. The game also has random encounters with multiple enemy types, and a complete inventory system. The game will not be multiplayer or have network capabilities.

**1.3. Definitions, acronyms, and abbreviations**

|  |  |
| --- | --- |
| UNITY | A game engine for software development |
| C# | A general purpose object-oriented language |
| GIMP | Photo and graphic development software |
| GUI | Graphical User Interface |
| RPG | Role Playing Game |

**1.4. References**

A *use case diagram* has been attached to section 3.1. Also attached to section 3.1 is a *use case* requirement tractability matrix.

IEEE Software Engineering Standards Committee, “IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications”, October 20, 1998.

**1.5. Overview**

This document contains all information pertaining to the specifics of development of this software system. It contains the intended purpose of the game, and gives a complete detail of all the components involved. Also, the document describes the technologies that intend to be used in the development process.

1. **General Description**
   1. **Product Perspective**

The software being developed is a 2D role playing game that is based in a dungeon environment. The software will work on Windows, Mac, and Linux machines. The minimum memory requirement is 512 Mb. The minimum CPU requirement is AMD Athlon, or an Intel i3 processor. The system must also have at least 500mb of hard drive space for installation.

**2.2 Product Functions**

This game will let the user pick their desired player race and class. The user will have the ability to choose between four different player and race classes. The user will then have the ability to start a new game, or continue a saved game. The user can navigate through the game using a keyboard and interact with GUI components with their mouse. The user will be able to select though a list of inventory items at their discretion. Also, random enemy encounters will occur through the game where the user can select to attack their opponents with a random chance of doing damage.

**2.3 User Characteristics**

There is only one intended user of the software system. This user’s purpose is only to play the game.

**2.4. Constrains**

The constraints of this software systems access to a keyboard and mouse, and minimum system requirements. These requirements include CPU, memory, and storage space. (See section 2.1)

**2.5. Assumptions and dependencies**

The assumption about this product is that it’s intended to only be used by a PC. If the PC does not meet the necessary system requirements, the software will perform poorly.

1. **Functional Requirements**

**3.2.1.1 Functional requirement 1.1**

**ID: FR1**

TITLE: Start a new game

DESCRIPTION: A user should be able to start a new game when they turn on the game. In order to play the game you have to start a new game.

**3.2.1.2 Functional requirement 1.2**

**ID: FR2**

TITLE: Select a race

DESCRIPTION: When the user starts a new game, to continue to the game the user needs to choose a race for your character.

**3.2.1.3 Functional requirement 1.3**

**ID: FR3**

TITLE: Select a class

DESCRIPTION: When the user picks a race, to continue to the game the user needs to choose a class for your character.

**3.2.1.4 Functional requirement 1.4**

**ID: FR4**

TITLE: Move through the maze

DESCRIPTION: Through the game you have to be able to move through the dungeon to be able to encounter enemies to get to the boss.

**3.2.1.5 Functional requirement 1.5**

**ID: FR5**

TITLE: Access inventory

DESCRIPTION: A key aspect of the game is to be able to access the inventory system. You need the inventory system to access potions, change armor, change weapon, and to be able to use special items.

**3.2.1.6 Functional requirement 1.6**

**ID: FR6**

TITLE: Change armor

DESCRIPTION: Through the dungeon experience you will have the opportunity to get better armor then you currently have. You need to have the option to change the armor to the better one.

**3.2.1.7 Functional requirement 1.7**

**ID: FR7**

TITLE: Change weapon

DESCRIPTION: Through the dungeon experience you will have the opportunity to get a better weapon then you currently have. You need to have the option to change the weapon to the better one.

**3.2.1.8 Functional requirement 1.8**

**ID: FR8**

TITLE: Loot enemy

DESCRIPTION: Through the dungeon experience you will fight and defeat enemies. To access they bosses key, better armor, potions, special items, weapons you will need to be able to loot the enemies you defeat.

**3.2.1.9 Functional requirement 1.9**

**ID: FR9**

TITLE: Attack Enemies

DESCRIPTION: The option to loot the enemies you defeat come down to the ability to attack enemies. The use should be able to attack enemies.

**3.2.1.10 Functional requirement 1.10**

**ID: FR10**

TITLE: Healing user

DESCRIPTION: From your journeys in the dungeon, you need the ability to heal yourself before you die.

**3.2.1.11 Functional requirement 1.11**

**ID: FR11**

TITLE: Save the game

DESCRIPTION: During the dungeon experience you have to have the ability to save the game.

**3.2.1.12 Functional requirement 1.12**

**ID: FR12**

TITLE: Load the game

DESCRIPTION: If you have saved a game, you will have the ability to load that save and continue where and when you left off.

**Use Cases:**

|  |  |
| --- | --- |
| Name | UC-1: Start Game |
| Summary | User Starting a new game |
| Rationale | When starting a new game, the user needs the option to select a new game |
| Users | All users |
| Pre-conditions | User has to be able to turn on the game |
| Basic course of events | 1. The user indicates that the software perform a new game 2. The software responds by starting new game |
| Alternative Paths | 1. In step 1, the user indicate the software performs a new game. In this case the user wants to load a previously started game. |
| Post-conditions | A game has been started. |

|  |  |
| --- | --- |
| Name | UC-2: Select Race |
| Summary | User selects Race option |
| Rationale | When starting a new game, you have to select a race for your character |
| Users | All Users |
| Pre-conditions | User must be starting a new game |
| Basic course of events | 1. The user indicates that the software is to perform a new game 2. Software responds by requesting the race the user desires 3. The user picks the race 4. The software confirms race chosen |
| Alternative paths | N/A |
| Post-condition | User picks a race |

|  |  |
| --- | --- |
| Name | UC-3: Select Class |
| Summary | User selects desired class |
| Rationale | When starting a new game, user must select a class for character |
| Users | All Users |
| Pre-conditions | User must have selected new game and picked a race already |
| Basic course of events | 1. The user indicated to play a new game and has picked race already 2. Software responds by requesting user to pick a class 3. User selects desired class 4. System confirms class choice |
| Alternative paths | N/A |
| Post-conditions | User picked desired class |

|  |  |
| --- | --- |
| Name | UC-4: Move |
| Summary | User has the ability to move through the Maze |
| Rationale | The user needs to move through the maze to be able to find the key to the boss |
| Users | All Users |
| Pre-conditions | Must be inside the dungeon |
| Basic Course of Events | 1. The user indicates that the software is to perform a move. 2. The software responds by requesting the direction of the move 3. The user specifies the direction of the desired move. 4. The software moves the character to that location. |
| Alternative Paths: | 1. On Step one the user indicates to perform a move, In this case the user changes mind. |
| Post-conditions | User moves to desired location. |

|  |  |
| --- | --- |
| Name | UC-5: Access Inventory |
| Summary | User accesses Inventory |
| Rationale | While playing the game, the user may want to access inventory for many reasons, and needs to be able to do it. |
| Users | All Users |
| Pre-conditions | Must be playing the game |
| Basic Course of Events | 1. The user indicates that the software is to open the inventory 2. The software responds by opening the inventory. |
| Alternate Paths | User changes mind about inventory access |
| Post-conditions | The user accesses the inventory. |

|  |  |
| --- | --- |
| Name | UC-6: Change Armor |
| Summary | The user changes Armor |
| Rationale | While playing the game, the user may find a better piece of armor, the user will need the ability to access and replace its armor |
| Users | All Users |
| Pre-conditions | User must be playing game and has accessed its inventory |
| Basic Course of Events | 1. The user indicates they want to access inventory 2. The software responds by showing inventory 3. The user indicates they want to change armor 4. The software responds by requesting new armor selection 5. The user selects new armor 6. The software confirms new armor change |
| Alternative Path |  |
| Post-conditions | User changed armor |

|  |  |
| --- | --- |
| Name | UC-7: Change Weapon |
| Summary | User changes weapon |
| Rationale | While playing the game, the user might get a better weapon, and would like to change to that weapon. |
| Users | All Users |
| Pre-conditions | User must access inventory |
| Basic Course of Events | 1. The user indicates that the software needs to perform a change weapon action 2. Software responds by requesting new weapon selection. 3. User selects new weapon 4. Software confirms new weapon |
| Alternative Path |  |
| Post-conditions | User changes weapon |

|  |  |
| --- | --- |
| Name | UC-8: Loot |
| Summary | User Loots Enemy |
| Rationale | While playing the game the user will encounter enemies, after defeating the enemies, they will drop loot. The user needs to be able to take loot. |
| Users | All Users |
| Pre-conditions | User must have just fought an enemy |
| Basic Course of Events | 1. The software responds by asking if you want to take loot. 2. User confirms they want the loot. |
| Alternative Paths |  |
| Post-Conditions | User loots enemy |

|  |  |
| --- | --- |
| Name | UC-9: Attack Enemies |
| Summary | The user attacks enemies |
| Rationale | While playing the game you will encounter enemies and will have to attack them |
| Users | All Users |
| Pre-conditions | User must be inside dungeon |
| Basic Course of Events | 1. The system will indicate you have encountered an enemy and give you options: 2. Attack 3. Heal 4. The user responds by requesting attack 5. The system confirms choice and attacks enemy. |
| Alternative Paths |  |
| Post-conditions | User attacks enemy |

|  |  |
| --- | --- |
| Name | UC-10: Heal Self |
| Summary | User heals self with potion |
| Rationale | While encountering enemy, the user has the ability to heal self if too much damage is taken. |
| Users | All Users |
| Pre-conditions | User must be in the middle of an encounter with an enemy, and be able to access inventory |
| Basic Course of Events | 1. The software responds by giving you action choices. 2. Attack 3. Heal 4. User responds by requesting heal 5. System confirms and uses potion from inventory to heal self |
| Alternative Paths |  |
| Post-conditions | User heals self, and one potion is subtracted from inventory. |

|  |  |
| --- | --- |
| Name | UC-11: Use Item |
| Summary | User uses item |
| Rationale | While in the game, you could want to use items during fight or heal |
| Users | All Users |
| Pre-conditions | User must be able to access inventory |
| Basic Course of Events | 1. User lets software know there requesting the use of an item. 2. Software responds by asking the item to use. 3. User selects item to be used 4. Software confirms item |
| Alternative Path | User changes mind and chooses not to use item |
| Post-condition | User uses item |

|  |  |
| --- | --- |
| Name | UC-12: Save Game |
| Summary | User saves instance of game |
| Rationale | While playing the game, user wish’s to save game to come back later. |
| Users | All users |
| Pre-conditions | User must be playing the game to save it. |
| Basic Course of Events | 1. User tells the software that they wish to save game. 2. Software confirms the user wish’s to save and saves instance |
| Alternative Path | User Changes mind |
| Post-conditions | User saves game |

|  |  |
| --- | --- |
| Name | UC-13: Load Game |
| Summary | User Loads Saved Game |
| Rationale | After playing the game up to a point, you saved it. Now your back and wish to load and start from where you left off. |
| Users | All Users |
| Pre-conditions | User must have a saved game |
| Basic Course of Events | 1. User tells software to start a load game went 2. Software responds by requesting the saved game file 3. User submits the saved game file 4. Software loads game 5. User starts game from where they left off |
| Alternative Path | User wish’s to start new gave instead. |
| Post-conditions | User loads saved game. |