**MINI PROJECT**

**KonQr 3D**

**FUNCTIONALITY SPECIFICATION DOCUMENT**

Date: 20-01-16 Batch Id: 13A06

Roll No:

13251A1250

13251A1256

13251A1257

13251A1258

**Table of Contents**

1. Introduction ………………………………………………. 3
   1. Purpose ……………………………………………. 3
   2. Background of the problem ……………………….. 3
   3. Proposed system …………………………………... 4
2. Scope ……………………………………………………… 4
3. High level conceptual solution architecture ………………. 4
4. Assumptions and Dependencies …………………………... 5
5. Acronyms and Business terms ……………………………. 5
6. Functional Requirements …………………………………. 6
7. Non-Functional Requirements ……………………………. 6
8. Interfaces …………………………………………………. 6
   1. User interface ……………………………………... 6
   2. Hardware interface ………………………………... 6
   3. Software interface ………………………………… 7
   4. Communication interface …………………………. 7

**1. Introduction**

**1.1 Purpose:**

This document specifies all the requirements for the game software. It will illustrate the purpose and complete declaration for the development of this software. It will also explain system constraints, interface and interactions with other external applications. These requirements specified relate to the functionality, constraints, performance, attribute and the system interface.

**1.2 Background of the problem:**

Most of the high-end games are expensive and very few are multi-platform. Most games include long and herculean tasks to reach the destination and are generally single-platform.

**1.3 Proposed system:**

KonQr 3D, a single player game comprises multiple 3D models. The player equipped with weapons has to cross multiple levels one by one in order to finish the game. There will be multiple enemies and one fighter battling to conquer the premises.

The addition of external buttons to emulate keys will be used to interact with the game software. The characters will be animated and supported by unique parameters for each, in addition to relevant audio support.

Concepts of computer graphics shall also be used to achieve highly realistic look and feel. The game shall be attempted to support multiple platforms and shall be user friendly, omitting age and compatibility constraints respectively.

**2. Scope**

**Project scope:**

* Score card: A continuous score monitoring
* Game history: Information about tools used will be specified
* Tools ad tips: Details of the controls to be used for the player’s motion are mentioned accompanied with user’s guide.

**3. High level conceptual software architecture**

**Move**

**Player Shoot**

**Right**

**Left**

**Backward**

**Forward**

**Start Screen**

**Select Resolution**

**EH=0**

**Enemy Health- n**

**Play**

**Quit**

**High Score**

False

**Enemy Attacks**

**Enemy Death**

**Player Health-n**

**PH=0**

True False

True

**Score+**

**Player Death**

False

True

**Next Level**

**S>=Max**

True

**4. Assumptions and Dependencies**

**Project starts with assuming:**

* The game will be stable with Windows XP and greater in Windows OS.
* The KonQr3D game will be functional.
* Dedicated development resources are available**.**

**Constraints/Dependencies:**

* The response time should be quick and realistic.
* Age compatibility.
* The game will be written in C#. Therefore the game will comply with the programming practices of C#.

**5. Acronyms and Business terms**

|  |  |
| --- | --- |
| **Acronym/Term** | **Definition** |
| API | Application Program Interface |
| SDK | Software Development Kit |
| AI | Artificial Intelligence |
| IDE | Integrated Development Environment |
| AC | Animation Controller |
| AOC | Animation Override Controller |
| Environment | The virtual world of a video game. Consists of entities and defined interactions |
| Prefab | Prefab is a type of asset that allows you to store a GameObject object, complete with components and properties. |

**6. Functional Requirements**

* Player must move without time lag.
* The control should trigger immediate movement in the game.
* Smooth transition from one level to another.
* The product must contain appropriate score recorder.
* Game should have more than one level of challenges.
* Game should have at least one player character**.**

**7. Non Functional Requirements**

**Game specific**:

* Pause functionality shall be made available.
* Speed: Nominal and reasonable game speed and less buffer time.
* The game shall contain realistic 3D character.

**Performance:**

* AI processing tends to take a great deal of CPU time. It is required that the various AI techniques implemented will be efficient enough such that they will not hinder the execution speed of a video game.
* The game shall take initial time to load, considering the high end elements in the same.
* It shall take little amount of initial run time.
* The game software load speed shall depend on the user’s system configuration and system’s space.

**Portability:**

* KonQr 3D is portable.
* It can be deployed across multiple platforms.
* The user has to run an executable file.
* Standard cross-platform libraries will be used to minimize platform dependencies.

**Reliability:**

* Software defects will be analyzed, and resolved as they arise throughout the course of project.
* Overall reliability will be supported through the iterative development process.

**8. Interfaces**

**8.1 User interface:**

The user interface will be primarily consistent on desktops or laptops using Windows, Linux (Ubuntu), Mac OSX operating systems and secondarily on Android phones.

**8.2 Hardware interface:**

As the game does not demand internet connection, a basic assembled system is required.

KonQr 3D game uses the hardware mainly to obtain the inputs from the user using input devices. It runs on any computer hardware meeting the following criteria:

* Includes a Keyboard
* Includes Memory Storage
* Includes a Mouse / Touch Screen
* A Display Device for the GUI

**8.3 Software Interfaces:**

**Programming Languages:**

* C#
* JavaScript

**Software or technology:**

* Unity Game Engine
* Mono develop
* Microsoft visual Studio 2015

**8.4 System Requirements:**

The system requirements for running the game are:

**Desktop:**

* OS: Windows XP SP2+, Mac OSX 10.8+, Ubuntu 12.08+
* Graphics card: DX9 (shader model 2.0) capabilities
* CPU: SSE2 instruction set support
* Web Player (deprecated): Requires browsers that support plugins (NPAPI), like IE, Safari, and some versions of Firefox

**Android**: OS 2.3.1 or later; ARMv7 (Cortex) CPU or Atom CPU; OpenGL ES 2.0 or later

**8.5 Controls/Input Output System:**

* Keyboard/Touch panel
* Mouse
* Monitor
* Screen