# Software Requirements Specification

## *FurReal Engine*

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# 1. Introduction

The introduction section of the System Requirements Specification (SRS) provides information in regards to the programs scope and to list any definitions, acronyms, and abbreviations.

## 1.1 Scope

Our company has been contacted to create software for Cougar Gaming. Cougar gaming is a company that primarily focuses on simulating many gaming mechanics including the combat system. Our team plans to create a game engine, named {NAME}, to allow for users to have monsters and characters fight while we record combat stats (STR, INT, WIS, DEX, CON, HTH) and report many other useful results. Our program will also allow for PC's and NPC's to interact with each other.

## 1.2 Definitions, Acronyms, and Abbreviations

| Term | Definition |
|---|---|
| User/Player | Refers to the user of the program |
| stats | Refers to combat statistics |
| STR | Refers to the character's attribute Strength |
| INT | Refers to the character's attribute Intelligence |
| WIS | Refers to the character's attribute Wisdom |
| DEX | Refers to the character's attribute Dexterity |
| CON | Refers to the character's attribute Constitution |
| HTH | Refers to the character's attribute Health |
| DL | Refers to a monster's dungeon level |
| PC | Refers to the term Playable Character |
| NPC | Refers to the term Non-Playable Character |
| D20 | Refers to the action of a user rolling a 20-sided die |
| SRS | System Requirements Specification |

# 2. Interfaces

The interfaces section of the System Requirements Specification (SRS) provides information in regards to system interfaces, user interfaces and constraints.

## 2.1 System Interfaces

Other systems that could potentially interface with this software are other games. Many other games could potentially have the ability to use our combat system, user modules and other functions in their game. Doing this will allow them to calculate many combat stats like health loss, damage done and treasure gained.

## 2.2 User Interfaces

There are many user interfaces that the software will possess. We plan to provide and update this section with UI mock-ups to give a visual of this.

We plan to provide many boxes to the primary scene, one of them being the attributes section with tons of useful stats visually displayed in and easily readable format. In addition to this, a treasure tracker to display the total amount of treasure gained by the character. Lastly, the scene itself, characters and monsters.

## 2.3 Constraints

There are not many constraints with this software. However, writing the software in C# would be considered one. Writing the software in C# may potentially limit us to using certain utilities, functions and libraries which may not be as helpful to us as other languages may be. Lastly, using C# may generate slightly different results than other languages would.

# 3. Specific Requirements

The specific requirements section of the System Requirements Specification (SRS) provides information in regards to functional and non-functional requirements. It does this with help from the requirements elicitation section.

## 3.1 Functional Requirements

| REQ # | PRIORITY | REQUIREMENT | DEPENDENCIES |
|---|---|---|---|
| FR-01 | | Characters gain bonuses correlating to their profession with each increase in level | |
| FR-02 | | Specific environments can affect a PC or NPC/Monster's ability to fight | |
| FR-02A | | Scene level, number of characters, and the character's profession levels are used to determine the CD | FR-02 |
| FR-03 | | Treasure can only be accessed after all monsters are defeated | |
| FR-04 | | Success of all character and monster actions are determined randomly | |
| FR-02B | | CD is determined by the sum of all monster DLs in current scene | FR-02 |
| FR-05 | | Character initiative is modified by PC's intelligence | FR-09 |
| FR-06 | | Monster initiative is modified by monster's DL | FR-09 |
| FR-07 | | Sum of three D6 rolls is equal to the statistic score (i.e. a PC stat) | |
| FR-08 | | A D20 roll determines level of success | |
| FR-09 | | Character initiative at start of combat is determined randomly (can be modified) | |
| FR-10 | | PCs and Monsters with health less than or equal to zero are considered dead | |
| FR-07A | | Characters have six types of statistics (STR, INT, WIS, DEX, CON, HTH) | |
| FR-11 | | Scene levels start at one and increases each scene | |
| FR-12 | | Monsters and NPCs choose attacking targets randomly | |
| FR-13 | | PCs are given a list of targets to attack | |
| FR-14 | | At start of simulation, tester is to choose a scene or let one be chosen randomly | |

| | | | |
|---|---|---|---|
| FR-15 | | Tester must specify max and starting scene level | |
| FR-16 | | Tester must specify number of characters and monsters for scene | |
| FR-17 | | Tester is allowed to let number of characters and monsters, either or both, be randomly selected | |
| FR-18 | | User is allowed option to select specific monsters for scene (if not random) | FR-17 |
| FR-19 | | Tester must choose if a character is a PC or NPC | |
| FR-20 | | Tester may choose profession for character, or it is chosen randomly | |
| FR-21 | | NPC combat actions are simulation-controlled | |
| FR-22 | | For each PC, tester must select a valid option | |
| FR-23 | | Tester chooses for each character to heal "Each level" or "Upon Death" | |
| FR-24 | | Tester will specify how many times a scenario will be run of the same scene | |
| FR-25 | | Data values are reset at start of each new scenario | FR-34 |
| FR-26 | | Users (testers/admin) run simulations and generate report **functional** | |
| FR-27 | | Administration (admin ONLY) can modify base data (insert, delete, etc) **functional** | |
| FR-28 | | Administration (admin ONLY) can create/delete accounts **functional** | |
| FR-29 | | Character stats modify (positively and or negatively) it's ability to fight **functional** | |
| FR-30 | | CD may be higher or lower depending on if user chose Novice, Apprentice, or Master **functional** | FR-02B |
| FR-31 | | As scene level increases, so do monster levels **functional** | FR-11 |
| FR-32 | | Any remaining CD after tester selection is randomly met by putting random monsters on the scene (???) **functional** | |
| FR-33 | | A round ends when all monsters are defeated **functional** | |
| FR-34 | | Raw data of all values are collected for each scenario **functional** | |
| FR-35 | | Report is generated at end of software containing: means, standard deviations over entire population, and medians for each value **functional** | |

## 3.2 Non-Functional Requirements

| REQ # | PRIORITY | REQUIREMENT | DEPENDENCIES |
|---|---|---|---|
| NFR-04 | | Must be coded in C# | |
| NFR-05 | | Simulation results are generated via the "Monte Carlo method" | |
| NFR-13 | | Raw data values should be stored separately from the analysis values | |