Requirement Specification

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1.1 Scope

This product is intended for use by Cougar Gaming. The decided name of this software is “Quest for the Golden Fedora”. Cougar gaming wants a game engine created that simulates the combat system of a game. This game puts Player Characters and Non-Player Characters up against each other. The Player Characters have one of three professions which all offer different fighting styles. The players also can modify their character’s statistics that affect the combat of said character. The computer controlled monsters in the game also have modifiable statistics and the player characters and non-player characters then fight in a scene. A scene contains multiple levels and difficulties. Once a scene is completed by killing all the monsters the player gets access to treasure. Success of moves are determined randomly as well as statistic scores. Combat rounds start with a combat initiative and then players are given a list of viable targets to choose to attack. The NPCs target is chosen at random. Once a character’s health is less than or equal to zero the character is dead for the rest of the scenario. The only way out of this is a special heal granted by the tester. The tester of the software has the option to specify options within the combat system. They can choose the scene, monsters, difficulty, heal, profession, etc. Whatever is not selected by the tester the software randomly chooses for the tester. At the end of the combat the software will output the stats that have been recorded by the simulation. The administrator has to be granted access to the base data and be able to modify it. The administrator also needs to be able to create and remove accounts.

1.2 Definitions, Acronyms, and Abbreviations

- PC – player character
- NPC – non player character
- Scene – The environment in which the game is being player
- Profession – Soldier, Combat mage, or Priest
- Statistics – the six combat modifying elements of the game
- INT – intelligence
- WIS – wisdom
- DEX – dexterity
- CON – constitution
- HTH – health
- STR – strength
- DL – difficulty level
- CD – combat difficulty
- Grant heal – user choice of who to heal and how
- Strength – impacts characters’ ability to do damage
- Intelligence – modifies monsters with magical attacks
- Dexterity - modifies a character’s ability to avoid damage
- Constitution- changes the amount of damage a character can take during combat

- Health – represents the amount of damage a character can take during combat
- Initiative – modified by character intelligence at beginning of combat round

2.1 System Interfaces

This software system should be mainly self-contained. The majority of work is done in the combat simulation which is all internal. The only system that this software would have to interact with is an external database that would contain user accounts created in the software. This would contain the username and passwords of each account and this is the data that the administrator needs to also have access to. Otherwise the system does not interface with any other systems.

2.2 User Interfaces

Beginning at the startup of the program the user should be able to choose a scene environment. If none is selected it is chosen randomly. Next the user can specify the maximum level and starting scene level. Then the user can choose the number of characters and the monsters combat difficulty. The user can also specify monsters in the starting scene. Just like the choice of starting scene, if any of the selections have been left blank it is then filled with a random value. Next the user must choose if the characters will be a player character or a non-player character. A profession must be picked for each character in the game and if nothing is selected it will be selected randomly. When it is a player character move the user will be prompted to select a legitimate action for that round. Finally, the user can grant a heal to any of the character and this can be at the start of each level or when the character dies in the scenario. Administrators of the software can modify the base data that was selected at the beginning of the simulation. They can choose to modify, insert, or delete this data. Administrators also will be able to create or delete accounts within the software.

2.3 Constraints

The first constraint for this software is that if must be written in C#. Another constraint is that it has to use the Monte Carlo method to generate simulation results. A third constraint it the software has to support user accounts so everyone cannot access the simulation software.

3 Specific Requirements

Reg #	Priority	Requirement	Dependencies
NFR-01		Must have a combat system	[N/A]
NFR-02		Record combat statistics	[N/A]
NFR-03		Report combat statistics	[N/A]
NFR-04		Support playable and non-playable characters	[N/A]
NFR-05		All monsters are computer controlled	NFR-04
NFR-06		Multiple types of monsters	NFR-04
FR-19		All characters have a profession	NFR-04
NFR-07		Each character support different combat type	FR-19
NFR-08		Level system used to represent skill	FR-19
FR-01		Bonuses acquired through level	NFR-07
NFR-09		Statistics system that affects characters' performance in battle	NFR-01
FR-02		Statistics values affect profession skills	NFR-08
NFR-10		Monsters have separate statistic system	NFR-09
NFR-11		Have a scene	[N/A]
FR-03		Scene supports level system that determines challenge difficulty	NFR-11
FR-04		Environment impacts ability to fight	NFR-08
FR-05		Completing quest gives access to treasure	NFR-05/ NFR-06
FR-06		Difficulty increases through ability and number of monsters	NFR-10
FR-07		Statistics and success rate determined randomly	NFR-09
FR-08		Supports 20 levels of success and 3 -18 statistic score	NFR-09

NFR-12		Combat round begins with initiative	NFR-01
FR-09		Initiative modified by character stats and monster difficulty level	NFR-12
NFR-13		Monsters and NPCs randomly determine target	NFR-04/ NFR-06
FR-10		User given list of viable targets to choose from when attacking	NFR-01
FR-11		Character dies remains dead for subsequent scenes/scenario	FR-15
FR-12		User offered choice of scene	NFR-11
FR-13		User can choose scene, monsters, difficulty, and profession	FR-02/NFR-06/FR-03
FR-14		Software can randomize selections not finished by user in setup	[N/A]
FR-15		Tester may grant heal upon death or each level	[N/A]
NFR-14		Captures raw data of all values randomly generated and variable	NFR-09
NFR-15		Each start values reset to specified values or randomized as needed	FR-13/FR-14
NFR-16		Outputs a report with means, standard deviation, and medians for data values	NFR-14
NFR-17		Data values stored separately from analysis values	[N/A]
FR-16		Administrators have access to insert, modify, and delete the base data to run simulations	[N/A]
FR-17		Administrators can create and delete accounts	[N/A]
FR-18		Users, testers, and administrators can run simulations and generate reports	[N/A]
NFR-18		Software written in C#	[N/A]
FR-20		Tester must specify how many times the scenario will be ran	[N/A]