Software Requirements Specification

for

TowerOfDaedelus_WebApp

Version 1.0 approved

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Revision History

Name	Date	Reason for Changes	Version

1. Introduction

1.1 Purpose

The purpose of this document is to detail the features, systems, and interfaces used to improve the efficiency of operations and improve the experience of the Towers of Daedalus Roleplay. This document will describe the various situations present in the system and the actions the system will take.

1.2 Document Conventions

This document uses the typical Times New Roman, 12-point font typographical convention with a bold 14-point font for the heading. Indentations of the document mark when the section is broken down into multiple parts. The document also includes a header saying the title of the document and the page number. Priority is not inherited but requirements should have its priority level said which ranges from high, medium to low priority.

1.3 Intended Audience and Reading Suggestions

The intended audience for this document includes the development team, software engineers, and system testers. This document will have the scope, purpose, details, requirements, and features of the Towers of Daedalus Web Application. The overall description, external interface requirements, non-functional requirements and other requirements should be read by the role play development team and system testers. The overall description and system features should be read by the role play development team using the glossary if needed. The software engineers should read the overall description, external interface requirements, system features and non-functional requirements.

1.4 Product Scope

The system specified enhances the efficiency of the Towers of Daedalus Role Play by automating and streamlining various processes and procedures within the restaurant. The goal of this system is to simplify and standardize processes allowing for Game Masters and Role Players to focus less on game mechanics and more upon the game. This system also centralizes various administrative tasks, reducing the risk of tasks being overlooked or lost.

2. Overall Description

2.1 Product Perspective

The Tower of Daedalus Web Application is a new web site to aid members of the Tower of Daedalus Role Play by providing tools to enable the Game Masters and Players to focus less on the administration and game mechanics and more on the Role Play itself.

2.2 Product Functions

The System Will:
- *Store information in a Database*
- *Allow users to log in with discord*
- *Allow users to create and store their character sheets*
- *Allow game masters to roll dice*
- *Allow players to request the presence of a game master*
- *Display the status of the Role Play lobby*
- *Maintain a list of quests that are currently active*
- *Display a featured article gallery on the homepage*
- *Allow users to apply to become a non-player character*
- *Allow users to apply for a mission*
- *Allow users to apply to become a permanent player*

2.3 User Classes and Characteristics

2.3.1 Administrators

Administrators are the overseers of the system. They have unlimited permissions within the system and can see all pages and all information within the system.

2.3.2 Moderators

Moderators are a special role within the associated Discord server. They are tasked with peace keeping and rule enforcement within the Discord. Currently, moderators have no special permissions within the website.

2.3.3 Staff

Staff are members of the Role Play development team who manage the story, mechanics, art, modeling, and animations of the Role Play. Additionally, staff oversee various other administrative aspects of the role play. Staff have access to more pages and features than most user classes but are unable to make as much changes as an administrator would be able to.

2.3.4 Game Masters

Game Masters are users who guide and manage the role play from a mechanics and storytelling perspective. Game Masters can view and edit all information within the system but are unable to update security or other critical features of the system.

2.3.5 Assistant Game Masters

Assistant Game Masters fill a similar role to the Game Masters but follow the instruction and decisions of the Game Masters. For the purposes of the system, they have identical permissions to Game Masters.

2.3.6   Truth Seekers

Truth Seekers are permanent players in the role play who have been formally added as cast members. They only have access to information that either relates to their user account, is specifically made accessible to players, or is public.

2.3.7   Regular Visitors

Regular Visitors are players who make regular appearances in the role play but have not been formally added as cast members. They can create a character sheet but have limited access to any information that has not been made public.

2.3.8   Visitors

Visitors are players who make sporadic or single appearances in the role play. They can create a character sheet but have limited access to any information that has not been made public.

2.3.9   Non-Player Characters

Non-Player Characters are permanent players in the role play who do not play a single character. Non-Player Characters often play multiple supporting roles as needed by the story at the time. Non-Player Characters have access to story information related to the characters they are playing but have limited access to information that has not been made public. Non-Player Characters are sometimes also referred to as "Clockwork Soldiers."

2.3.10   Broadcasters

Broadcasters are members of the role play who broadcast their gameplay on services such as Twitch or YouTube. Broadcasters typically have another role that is used for granting most of their permissions. Broadcasters may have exclusive access to pages in the future.

2.3.11   Viewers

Viewers are users who view the role play from an outside perspective. Typically, viewers see the role play through broadcasters who are broadcasting their perspective. Viewers have no access to any information that is not public.

2.3.12   Bots

Bots are automated users that are built into the site itself. They primarily serve to ease cross-platform information sharing. Most often, the bots will communicate information to and from Discord.

2.3.13   Unauthenticated Users

Unauthenticated Users are users who have not logged into the site. The have the most limited access of any user class. Unauthenticated Users will not have access to any information that is not public.

2.4 Operating Environment

The system is a web application that runs on a web server hosted online. Users will access the web site through their web browser of choice and authenticate using Discord. The site will be configured to run on as many platforms as possible.

2.5 Design and Implementation Constraints

The system will need to be accessible by as many web browsers as possible. In addition, the system will need to function within a virtual reality environment. The interfaces will need to be designed with virtual reality input devices in mind as the system will often be accessed from within virtual reality.

2.6 User Documentation

Documentation for the users will be contained within the system itself. Guidance for a given feature will be featured either on the same page nearby or on a help menu. Internal documentation for the system itself will be stored in an internal development location and supply guidance for any potential future software engineers working on the system.

2.7 Assumptions and Dependencies

This project assumes that all users have a Discord account. This system is dependent on HTML and the web framework used to develop the site. Additionally, the system is dependent on the Discord API and potentially the VR Chat API. Furthermore, the system will be dependent upon the server architecture used to host it.

3 External Interface Requirements

3.1 User Interfaces

Users will interact with the system through their web browser of choice. The system itself will be designed so that it supports several different web browsers in an easy to user manner.

3.2 Hardware Interfaces

The hardware interfaces used to operate the system include a web server that hosts the system and the user's device that operates their web browser client. This system will use a client-server architecture.

3.3 Software Interfaces

Operating System: The system will run on a Linux web server while the client web browsers will run on several different operation systems.

Database: To store the information used by the system, data will be stored in a SQL database.

Website: The web application will run within a web browser on the client's device.

3.4 Communications Interfaces

The system will use HTTP, HTTPS, and TCP protocols to communicate between the client and the server.

4 System Features

4.1 Authenticate Users via Discord

4.1.1 Description and Priority

Users should be able to log in using Discord's OAuth2 service and have permissions granted to them based on the roles already assigned to them in the designated Discord server.

Priority: High

4.1.2 Stimulus/Response Sequences

Users navigate to the base web page

Users are presented with an option to log in

Users are prompted to log in with Discord

Users are redirected to Discord's authentication service

Upon successful authentication with Discord, the user is redirected back to the base web page and logged in

User is assigned permissions based on the information provided by Discord

4.1.3 Functional Requirements

Users will be assigned permissions based on the roles they have in the designated discord

The system shall restrict access to features and pages based on the permissions assigned to the user

If a user is not a member of the designated Discord server, they should receive no permissions.

4.2 Create and Store Character Sheets

4.2.1 Description and Priority

Users should be able to begin a guided character creation process that results in a character sheet being generated and stored within a database. Users and Game Masters should then be able to retrieve and view that character sheet when needed.

Priority: High

4.2.2 Stimulus/Response Sequences

User logs in if they have not already

User navigates to the character sheet page

If user has a character sheet stored in the database, it is displayed

If the user does not have a character sheet stored in the database, they are prompted to begin guided character creation

User is guided through character creation

User is prompted to assign ability scores via the 15 point-buy calculator

User is prompted to create an origin trait

User is prompted to create and add edges and flaws

User is prompted to create and add equipment traits

User is prompted to list any equipment they have

User is prompted to add an image representing their character

Upon completion, the generated character sheet is stored in the database and then displayed

4.2.3 Functional Requirements

Users should be guided step by step through character creation

Users should be able to assign ability scores using a 15 point buy calculator

Users should be able to create an origin trait that specifies the type of vision the character has, the languages they speak, and a description of their characters biological and biographical origin

Users should be able to create and add edges and flaws using the Energy Points and Trait Points system specified in the Role Play's World Anvil Website

Users should be able to create and add equipment traits using the Energy Points and Trait Points system specified in the Role Play's World Anvil Website

Users should be able to add any equipment their character has to a list

Users should be able to link an external image to their character data

Character Data should be stored in the database and linked to the User's account

Game Masters should be able to view any character sheet

Game Masters should be able to easily search for any specified character

Users should be able to view a full version of the character sheet

Users should be able to view an abbreviated version of the character sheet

Game masters and users should be able to edit a character's data

Game Masters should be able to note other negative and positive effects that have been applied to the character

Game Masters and users should be able to track changes to their equipment and inventory

Edges and Flaws should not be visible to anyone other than the user that created the character and game masters unless the user or game masters have specifically opted to do otherwise

During character creation, users should be able to specify if the character was previously a non-player character in the role play

Users should be able to browse a public listing of all characters

Users should be able to select a visibility option for their character. The options should be visible and non-visible

4.3 Allow Game Masters to Roll Dice

4.3.1 Description and Priority

Game Masters should be able to role dice within an interactive interface that displays the result in real time.

Priority: Normal

4.3.2 Stimulus/Response Sequences

Game Master logs in if not logged in already

Game Master navigates to the dice rolling page

Game Master specifies the options for the roll

Game Master submits the roll

The system calculates the roll and applies the options selected

The system displays the result to the Game Master

The system logs the result to a table

4.3.3 Functional Requirements

Game masters should be able to specify the type of die to use (20-sided die, 12-sided die, 10-sided die, 100-sided die, 8-sided die, 6-sided die, and 4-sided die)

Game Masters should be able to specify a positive number to be added to the result of the roll

Game Masters should be able to specify a negative number to be added to the result of the roll

Game Masters should be able to specify a character to import ability score information from

Game Masters should be able to specify an ability score to be applied to the roll from an imported character

Game Masters should be able to specify that the roll be made at advantage (roll twice and keep the higher result)

Game Masters should be able to specify that the roll be made at disadvantage (roll twice and keep the lower result)

Game Masters should be able to make multiple rolls at once

The System should store all rolls made in a log. The log should include the Game Master that made the roll along with all options selected

Administrators and Game Masters should be able to view the log of all rolls made

4.4 Allow Players to Request the Presence of a Game Master

4.4.1 Description and Priority

Players should be able to submit a request that notifies Game Masters that they need aid.

Priority: Normal

4.4.2 Stimulus/Response Sequences

Player logs in if they are not logged in already

Player navigates to the Game Master request page

Player selects a level of urgency for the request and a brief description of the reason for the request

Player enters their current location

Player submits the request

System provides feedback that the request was submitted

System makes a post in the discord notifying the Game Masters that a player requires assistance

Game Master answers the request and marks the request as complete

4.4.3 Functional Requirements

Players should be able to specify how urgent a request is

Players should be able to enter a brief description of the reason for their request

Players should be able to enter their current location

Submitted requests should be stored in a log

The system should relay any requests to a specific channel in the specified Discord server using a bot that pings all Game Masters

Game Masters should be able to view a log of all requests

Game Masters should be able to mark requests as complete

4.5   Display the Current Status of the Role Play Lobby

4.5.1 Description and Priority

The system should display whether the lobby is in a semi-open, closed, or offline state on the base page of the web site.

Priority: Low

4.5.2 Stimulus/Response Sequences

User navigates to the base page of the site

User can see the status of the lobby

4.5.3 Functional Requirements

The system should display if the lobby is in a semi-open state

The system should display if the lobby is in a closed state

The system should display if the lobby is in an offline state

4.6   Store and display a list of Quests that are Currently Active

4.6.1 Description and Priority

The system should maintain a list of quests that can be viewed by users

Priority: Low

4.6.2 Stimulus/Response Sequences

User navigates to the base page

User navigates to the quest page

System displays a list of active quests to the user

User selects a quest to view further information on

System displays a page with further information on the selected quest

4.6.3 Functional Requirements

The system should maintain a table of all quests

Game Masters and Administrators should be able to add quests to the table

Users should be able to view a list of all quests filtered by those that are marked as active

Users should be able to select a quest and see further information on it

The system should have a field that details enemies associated with the quest

The system should have a field that details rewards offered for completing the quest

The system should have a field that indicates who posted the quest

The system should have a field that provides a brief description of the quest

4.7 Display a Featured Article Gallery on the Homepage

4.7.1 Description and Priority

The system should display a gallery that displays a rotating gallery of featured articles from the World Anvil web site. The featured articles should change on a regular interval.

Priority: Low

4.7.2 Stimulus/Response Sequences

User navigates to the base page

User views the gallery

User selects an article from the gallery

User is redirected to the corresponding page on the World Anvil website on a new tab

4.7.3 Functional Requirements

The gallery should automatically update to a new article on a regular interval

4.8 Allow Users to Apply to be a Non-Player Character

4.8.1 Description and Priority

Users should be able to apply to become a non-player character in the role play on the website. Game Masters and administrators should be able to review these applications and approve or deny them.

Priority: Normal

4.8.2 Stimulus/Response Sequences

User logs in if they are not logged in already

User navigates to the non-player character application page

User fills out application form and submits it

System displays the status of the User's application

Admin reviews the application

Admin approves the application

Bot updates the user's roles in the designated Discord server

User is notified that their application was approved

4.8.3 Functional Requirements

Users should be able to fill out and submit an application

Users should be able to view the status of their application

Administrators should be able to view all submitted applications

Administrators should be able to approve or deny applications

The system should update roles in the discord via a bot when an application is approved

The system should notify users when their application is approved

4.9 Allow Users to Apply for a Mission

4.9.1 Description and Priority

Users should be able to apply to have a mission run for them via the website. Game Masters and Administrators should be able to review the application and approve or deny it

Priority: Normal

4.9.2 Stimulus/Response Sequences

User logs in if they are not logged in already

User navigates to the non-player character application page

User fills out application form and submits it

System displays the status of the User's application

If the user does not have a character sheet, the system prompts the user to begin character creation

The system then prompts the user to select team members for the mission

Admin reviews the application

Admin approves the application

User is notified that their application was approved

4.9.3 Functional Requirements

Users should be able to fill out and submit an application

Users should be able to view the status of their application

Administrators should be able to view all submitted applications

Administrators should be able to approve or deny applications

Users should be able to specify team members attending the mission with them

Team members should be able to view the status of the application

The system should detect if a user does not have a character sheet and prompt them to create one

The system should detect if a team member does not have a character sheet and prompt them to create one

The system should have a field for what information the user seeks to gain from the mission

The system should have a set of fields for contact information for the Game Master overseeing the story in their role play of origin

The system should notify users when their application is approved

4.10 Allow Users to Become a Permanent Player

4.10.1 Description and Priority

Users should be able to apply to become a permanent player within the role play. Game Masters and Administrators should be able to review the application and approve or deny it.

Priority: Normal

4.10.2 Stimulus/Response Sequences

User logs in if they are not logged in already

User navigates to the non-player character application page

User fills out application form and submits it

System displays the status of the User's application

Admin reviews the application

Admin approves the application

Bot updates the user's roles in the designated Discord server

User is notified that their application was approved

4.10.3 Functional Requirements

Users should be able to fill out and submit an application

Users should be able to view the status of their application

Administrators should be able to view all submitted applications

Administrators should be able to approve or deny applications

The System should have a field for users to specify their level of prior experience in role play

The system should update roles in the Discord via a bot when an application is approved

The system should notify users when their application is approved

4.11 Allow Users to View Light Story Information on Prominent Non-Player Characters and Game Master Non-Player Characters

4.11.1 Description and Priority

Users should be able to view information on prominent non-player characters and Game Master non-player characters with as little spoilers as possible.

Priority: Low

4.11.2 Stimulus/Response Sequences

User navigates to the base page

User navigates to the character story information page

System displays a list of characters

User selects a character to view further information

System displays a page with further information on the character

4.11.3 Functional Requirements

The system should keep a table of characters to display

The system should allow game masters and admins to edit the list of characters

Users should be able to select characters to view further information

5 Other Nonfunctional Requirements

5.1 Performance Requirements

The system shall be fast and responsive in as many environments as possible.

5.2 Security Requirements

The system shall put measures in place to protect the user's information and the system shall not release this information to unauthorized individuals. The system shall put in security measures to protect the integrity of the system.

5.3 Software Quality Attributes

5.3.1 Availability

The system should maintain constant availability.

5.3.2 Correctness

The system will be verified for correctness and will maintain accuracy when performing calculations.

5.3.3 Maintainability

The system will be accompanied by documentation and code comments that enable future software developers to maintain the system. Additionally, the source code will be maintained in an online repository accessible by the role play staff.

5.3.4   Usability

The system must be useable within a desktop, mobile, and virtual reality environment. Care must be taken to ensure that buttons and links are large enough to be accurately selected within a virtual reality environment.

5.4 Business Roles

5.4.1   Administrator/Staff

These users will have full access to the system and can perform any action they want.

5.4.2   Moderator

Moderators currently have no special permissions within the system

5.4.3   Game Masters/Assistant Game Masters

Game Masters have similar permissions to administrators but cannot make changes to security or administrative features

5.4.4   Permanent Players

Permanent players have access to any content that is public or relates directly to them

5.4.4   Visitors

Visitor players have access to any content that is public or relates directly to them

5.4.4   Non-Player Characters

Non-Player characters have access to any content that is public or relates directly to them. Additionally, non-player characters may have access to secret information that is necessary for them to perform their role

5.4.4   Viewers

Viewers have access only to information that is public

5.4.4   Bots

Bots have similar access to administrators but are automated users operated by the system.

Appendix A: Glossary

Discord

> Discord is a VoIP, instant messaging, and digital distribution platform. Users communicate with voice calls, video calls, text messaging, media, and files in private chats or as part of communities called "servers".

Game Master (GM)

> A Game Master is a player that serves the roles of referee, storyteller, and actor within a role play environment.

Game Master Non-Player Character (GMNPC)

> A GMNPC is a non-player character that has been deemed significant enough to the story that it needs to be played by the game master directly. This is typically reserved for primary antagonists or characters who have secret knowledge that the GMs are not ready for other players to know.

HTTP (Hypertext Transfer Protocol)

> A protocol which allows the fetching of resources, such as HTML documents.

HTTPS (Hypertext Transfer Protocol Over Secure Socket Layer)

> A protocol which allows the fetching of resources, such as HTML documents that does so over a connection encrypted by the Secure Socket Layer (SSL) protocol.

Interface

> A device or program allowing the user to communicate with the system.

IPv6 (Internet Protocol version 6)

> The communications protocol that provides an identification and location system for computers on networks and routes traffic across the Internet.

Non-Player Character (NPC)

> A non-player character is a character that serves to support the player characters and make the world feel alive. NPCs typically do not have agency to affect the world at large.

Operating System

> The software that supports a computer's basic functions.

OAuth2 (Open Authentication 2)

OAuth is an open standard for access delegation, commonly used as a way for Internet users to grant websites or applications access to their information on other websites but without giving them the passwords.

Player Character (PC)

Player characters are the focus of the story. The have the most agency to affect the world around them. Player characters are typically only ever played by one singular player and are typically retired when the player can no longer participate.

Server

A computer or computer program which manages access to a centralized resource or service in a network.

SQL (Structure Query Language)

A standardize query language for requesting information from a database.

Stakeholder

A person with an interest or concern in something, especially a business.

TCP (Transmission Control Protocol)

TCP is a communication protocol that focuses on ensuring that every packet is sent and received in good working order.

User

A person who operates the system or computer.

Virtual Reality (VR)

Virtual reality (VR) is a simulated experience that can be like or completely different from the real world. Applications of virtual reality include entertainment (particularly video games), education (such as medical or military training) and business (such as virtual meetings).

VRChat (VRC)

VRChat is an online virtual world platform. Created by Graham Gaylor and Jesse Joudrey and operated by VRChat, Inc

VRChat Role Play (VRC RP)

A VRChat Role Play is a role-playing experience that occurs within the game VRChat. VRC RPs typically involve several Game Masters who craft a story for a cast of Player Characters.

Website

A location connected to the internet that maintains one or more pages on the World Wide Web.