DND Inventory System Plan

January 11, 2020

1 Project Overview

1.1 Project Goal

Project *DND Inventory System* will allow users to track and dynamically alter one or more of the user's character's inventory and currently equipped items, affecting character's stats as a result.

1.2 Scope of Work

Kasin Sparks will perform all of the following task to the best of their abilities:

1. Server partition creation and management*

   (a) Server partition will be subject to the following terms

   - Partition size equal to 10 gigabytes (where 1 gigabyte = 1000 megabytes) worth of storage space.
   - Upload and Download speeds limited by Upload and Download speed provided by Internet Service Provider (ISP)

   (b) Management will include the following:

   - Online or over the phone assistance. Monday through Fridays from 9a.m. to 6p.m. EST.
   - Assistance with service migration to another server.
   - Minimum of ONE year (365 days) of server support, that will end 365 days after product is delivered to client, with optional renewal of support per year.

2. Web app creation

   (a) Flask application
   (b) SQLite3 database
   (c) Front end HTML, CSS, JavaScript, and Asynchronous JavaScript And XML (AJAX) to standards agreed upon.

* Only valid if Kasin Sparks is able to have ports 80/433 open via Internet Service Provider (ISP) and if ISP allows such services.

Client's Responsibility

1. Provide Kasin Sparks with all necessary assets.

2. Willing and able to assist Kasin Sparks with knowledge and mechanics relating to inventory system.

1.3   Project Timeline

Task	Period
Server Allocation	Month XX, 2020 - Month XX, 2020
SQLite3 Database Creation and Setup	Month XX, 2020 - Month XX, 2020
Flask Application Creation	Month XX, 2020 - Month XX, 2020
Front End Creation	Month XX, 2020 - Month XX, 2020
Target First Round Review*	**Month XX, 2020**
Target Delivery Date	**Month XX, 2020**

Table 1: Proposed Project Timeline

*After *Target First Round Review*, the timeline will be assessed. If work that was not listed in agreed upon plan is needed, an updated schedule will be attached in the Addendum.

2   Front End

2.1   Character/Inventory

Figure ?? and ?? show the planed layout of the application*. Group name will include but not limited to Armour, Weapons, etc. Groups may have subgroups that will also be collapsible.

Main menu screen is not shown.   * Layout is subject to change.

3   Back End

3.1   Programming Stack

The programming stack for project *DND Inventory System* will include the following technologies:

Linux Ubuntu 18.04.03 LTS will be the flavor of Linux used for server operating system. For more information about Ubuntu, please visit *https://ubuntu.com*

Apache2 Web server that will be used on the server to handle serving the website. Please visit *https://httpd.apache.org/* for more information about Apache2.

SQLite3 will be leveraged for the database and will be used to store all data pertaining to the users and website. For information regarding user data please see Table **??**. Please visit *https://sqlite.org/index.html* for more information about SQLite3.

Flask a web application framework which uses python, Werkzeug, and Jinja. Flask will be used to handle the back-end operations such as, but not limited to, communication to database, dynamic web page generation, user handling, business logic. Please visit *https://pypi.org/project/Flask* for more information.

Docker will be used to containerize the application which will in turn make the app more shareable and deployable. For more information, please visit *https://www.docker.com*

3.2   Data

Tables **??**, **??**, **??**, and **??** details data fields and data descriptions that will be used in the Web-app. Data may be represented differently in database, but will contain the fields as shown.

User's username and password will be hashed using an Advanced Encryption Standard (AES).
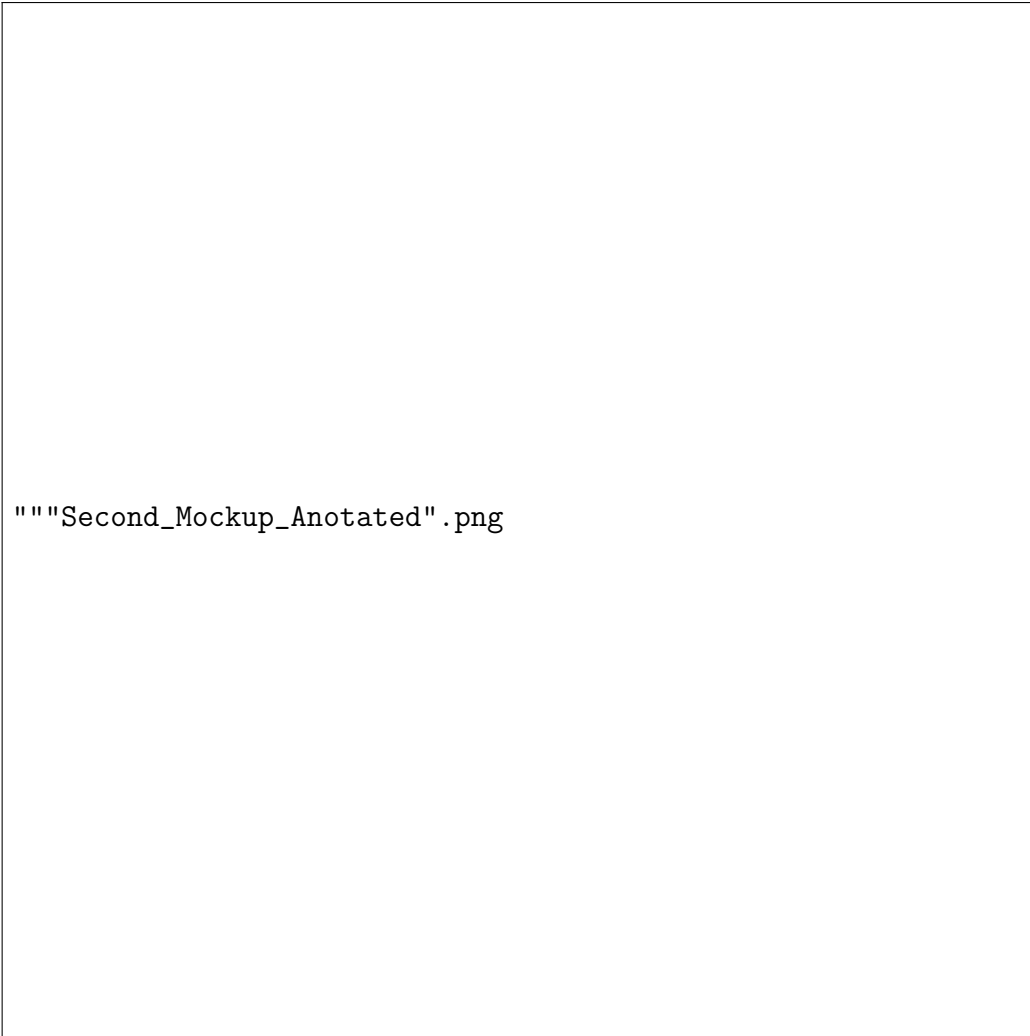
4 Tables and Figures

"""Second_Mockup_Anotated".png

Figure 1: Mock up

Field	Data Type	Description
User ID	Integer	User will be assigned an integer upon sign-up. For internal use only
Username	String	User's hashed login name
Display Name	String	User's name that will be visible to the user
Password	String	User's hashed password

Table 2: User Data

Field	Data Type	Description
Inventory	Item	User's character inventory. Item will be a custom data type.

Table 3: Inventory

Field	Data Type	Description
Character ID	Integer	Track user's characters. For internal use only
Character Name	String	User's character name
Class	String	Character's class
Race	String	Character's race
Level	Integer	Character's level
Current Experience	Integer	Character's current experience level
Max Level Experience	Integer	The number of experience points needed to next level
Strength	Integer	Character's strength
Dexterity	Integer	Character's dexterity
Constitution	Integer	Character's constitution
Intelligence	Integer	Character's intelligence
Wisdom	Integer	Character's wisdom
Charisma	Integer	Character's charisma
...	...	...

Table 4: Character Data

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"""Second_Mockup".png
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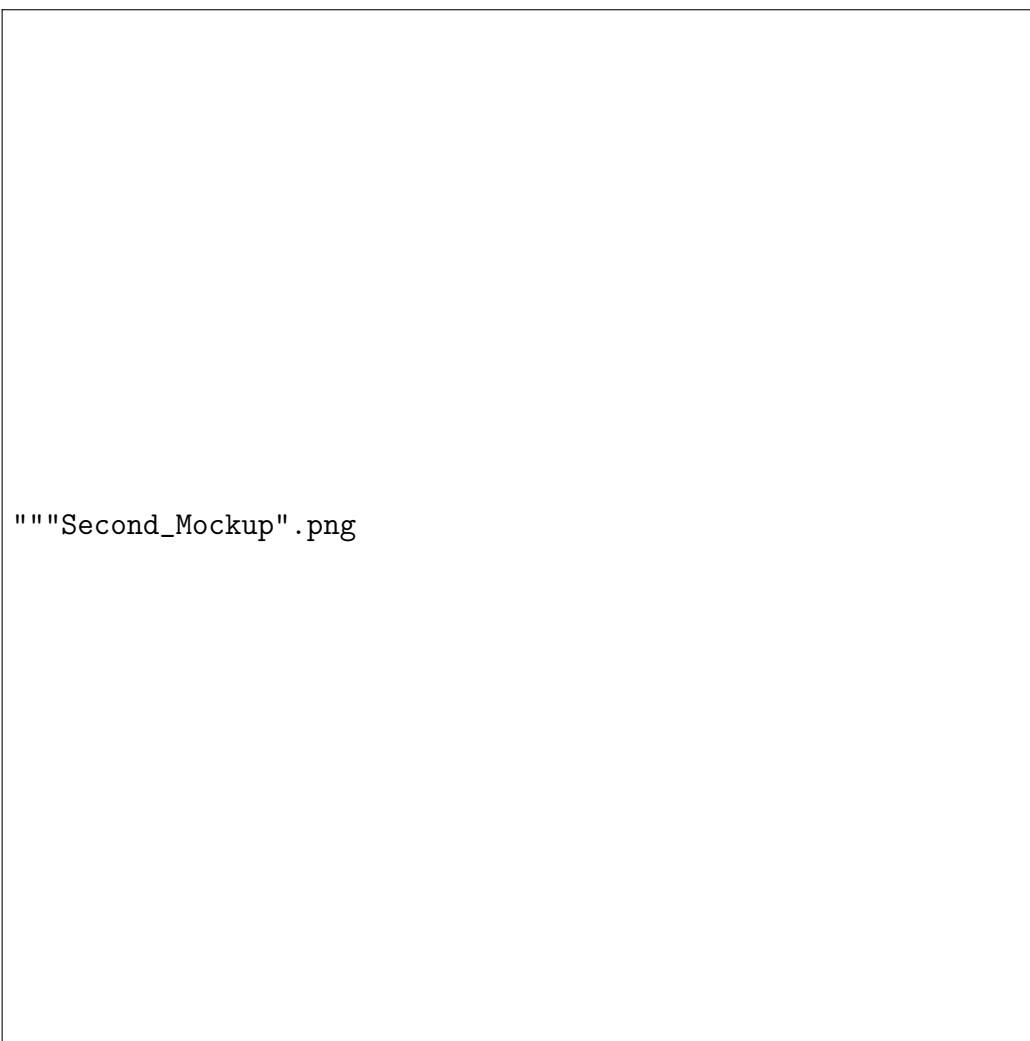
Figure 2: Mock up

Field	Data Type	Description
Helmet	Item	
Chest Piece	Item	
Shoulders	Item	
Gloves	Item	
Leggings	Item	
Boots	Item	
Weapon 1	Item	
Weapon 2	Item	
Weapon 3	Item	
Weapon 4	Item	
Ring Slot 1	Item	
Ring Slot 2	Item	
Trinket 1	Item	
Trinket 2	Item	
Magic Item 1	Item	
Magic Item 2	Item	
...	...	

Table 5: Character's Equipment

Field	Data Type	Description
ID	Integer	
Picture	Image	
Item Name	String	
Item Description	String	
Item Rarity	String	
Item Slot	String	
Strength Bonus	Integer	
Dexterity Bonus	Integer	
Constitution Bonus	Integer	
Intelligence Bonus	Integer	
Wisdom Bonus	Integer	
Charisma Bonus	Integer	
Effect 1	Integer	
Effect 2	Integer	

Table 6: Item