Senior Project Proposal

**Student Name**: Taylor Singleton

**Advisor Name**: Dr. Sean Hayes

**Expected Date of Graduation**: Fall 2021

**Description of Project**: My project will be a system to help keep track of rules and items in role-playing games that are difficult to implement using pen and paper. For instance, custom items that are created by a game master can be difficult to keep track of because they are not listed as official items in any of the Dungeons and Dragons source material. My project would provide an easy way to keep track of such items.

**Proposed Implementation Language(s)**: My project will use Meteor, which is an web framework that integrates JavaScript, MongoDB, and Node.js to build applications. Meteor’s website at <https://www.meteor.com/> reads, “Meteor is an open source platform for web, mobile, and desktop used by over half a million developers around the globe to make shipping javascript applications simple, efficient, and scalable.”

**Any Software/Equipment Needed**: My project will use Meteor, a JavaScript app building resource. I will be using a Visual Studio Code on Ubuntu 20.04 to develop the code. For networking, I will be using Meteor’s baked-in networking capabilities.

**Problem Statement**: There should exist a program that allows game master and players of table-top RPGs to keep track of difficult rules. Ideally, every rule of a role-playing table-top game should be used. Unfortunately, some tabletop RGPs contain rules that can be difficult and time consuming and can consume a large amount of paper. Specifically, in Dungeons and Dragons, such rules as carry capacity and encumbrance are difficult to keep up with. Removing the rule entirely is a common fix, but leaves the game feeling unrealistic at times. Additionally, items can be given in secret, but verbal communication ruins the secrecy. I propose a system that uses databases and networking to allow a game master to give items to players and to allow players to easily check how much weight they are carrying. Additionally, this program would be able to keep track of all player stats and would be a tool to ease the play of table-top RPGs in as many ways as possible. Tabletops have rules that can be confusing at times, so I will make a program utilizing databases to fix the problem.

**Motivation**: This project spawned from my desire to have a place to easily keep track of a list of items that can easily become too much for pen and paper. In addition, this project is a full stack application, the likes of which I have never done before. Completing it will further my knowledge of how to make an application usable by others via networking as well as how to design a nice user interface for the guts and plumbing of said app.

**Outline of Future Research Efforts**: I will complete my project by completing the personal inventory system first, then completing the networking portion to allow game masters to deliver custom items into players’ inventories. The game master can see all players’ inventories, but players can only see their own. The next step will be to create a spell book function which keeps track of players’ known spells and spell slots. Again, the game master can see all players’ spell books, while players can only see their own. Finally, I will add a system to ease character creation which can be confusing and daunting for new players. Some problems I have anticipated running into include familiarizing myself with Meteor, which can be solved with the platform’s tutorial. Another problem could be devices having multiple running games to keep track of. To remedy this, I plan on adding a game selection portion to my app so a person may participate in many games as a player or game master and the app will be able to keep track of the information for each game separately. In my research into Meteor, I have found a few tutorials to explain how to make basic apps. My project will differ from these as none that I have found incorporate multiple tabs, an interactable database, and a friend system.

**Schedule**:

* Personal Inventory System – Feb 9, 2021
* Networked Inventory System – Feb 9, 2021
* Personal and Networked Spell Book – Feb 9, 2021
* Character Creation System – Feb 16, 2021
* Final draft of the requirements document – February 16, 2021
* Create a test plan – February 24, 2021
* Finish beta version – March 9, 2021
* Complete testing on a beta version – March 16, 2021
* Analyze results from testing and make changes (bug fixes, design changes, etc.) – March 30, 2021
* Complete project documentation – April 6, 2021
* Defend project (expected to be Dec. 4th 2021) – December 4, 2021