

Aetalag Tabletop RPG Asset Manager for UTM CSCI 352

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Abstract

“Aetalag Tabletop RPG Asset Manager” is a modular asset management system for tabletop roleplaying games. The targets for “Aetalag Tabletop RPG Asset Manager” are those who wish to “make it easy” when working with TTRPG assets: dungeon masters and players alike. The project is three fourths of the way through the planning stage of development.

1. Introduction

“Aetalag Tabletop RPG Asset Manager” is a modular asset management system for tabletop roleplaying games built to assist the user in TTRPG character building and upkeep via gathering information from online databases and organizing the information in an accessible and dynamic manner. We expect the target audience to benefit from “Aetalag Tabletop RPG Asset Manager” due to its ability to better keep track of TTRPG elements in the heat of a game: initiative scores, health points, spell slots, etc.

1.1. Background

Tabletop RPGs, or role-playing games, are an increasingly common hobby in modern society that involve creating and acting out characters in fictional scenarios. One game is typically called a “session,” and multiple sessions are called a “campaign.” Two such examples of tabletop role-playing games are the widely popular Dungeons and Dragons (5th Edition) and Pathfinder (1st Edition). D&D [5e] and Pathfinder [1e] sessions tend to take place in high fantasy, magical settings; however, their rulesets are incredibly different. D&D [5e] is a simpler model and is thus easier to introduce to new players. Pathfinder [1], however, is better suited to players with some amount of tabletop experience, as there are an abundance of rules, some of which build off of an older model of D&D, that being D&D 3.5 edition. Some terms that would be useful to know are as follows:

Sheet: A page in a character’s portfolio, typically used to track their stats, equipment, and/or spells.

1.2. Challenges

A particular challenge in mapping out both the rulesets of D&D 5e and Pathfinder 1e is that, though we have access to source reference documents and particular websites that compile all of the information from several source books and pdfs, there is simply too much information out there (in Pathfinder specifically). In Pathfinder alone we have to compile all of the feats, classes, races, class archetypes, traits, alternate racial abilities, spells, and common equipment. This is a gargantuan undertaking, and a simple solution would simply be to add less content than we hope: to cut out the equipment databases and alternate features in favor of the minimum required amount.

2. Scope

Completion of the project entails the existence of a D&D 5e and Pathfinder 1e character maintenance tool that rivals traditional pen and paper sheets in terms of quality of life assurance and ease of access to information. While this software may not render the pen and paper style obsolete, it should prove valuable as a beginner’s introductory tool to tabletop roleplaying or as a reference for rules and monster stats for Dungeon Masters. As for stretch goals we would like to give the user to save their sheet at a .pdf or .txt, and have an automatic initiative roller.

2.1. Requirements

Most requirements for “Aetalag Tabletop RPG Asset Manager” are derived directly from the standard pen and paper style of managing a character. Each requirement listed below deserves to be here because it makes the player’s life easier, whether that requirement does something better than pen or paper, or adds new functionality.

Use Case ID	Use Case Name	Primary Actor	Complexity	Priority
1	Closing the Program	User	Low	1
2	Adding a New Entity to "HP Tracker"	User	Low	1
3	Creating a Blank Character Sheet	User	Low	1

TABLE 1. SAMPLE USE CASE TABLE

2.1.1. Functional.

- Users are able to create new characters - By clicking on the "New Sheet" button on the "Aetalag Tabletop RPG Asset Manager" window the user is able to create a new character from scratch.
- Users are able to open old sheets - By clicking the "Open Sheet" button on the "Aetalag Tabletop RPG Asset Manager" window the user is able to open a saved sheet
- User is able to use the "Make it Easy" functionality to create a new character - By selecting the "Make it Easy" button on the "Aetalag Tabletop RPG Asset Manager" the user is able to quickly make a character
- Users are able to keep track of the HP of entities - Using the "HP tracker" subsection of the "Aetalag Tabletop RPG Asset Manager" users should be able to add new entities, edit their values and name, and remove entities from the subsection
- Users are able to keep track of the initiative scores of entities - Using the "Initiative Tracker" subsection of the "Aetalag Tabletop RPG Asset Manager" users are able to track the initiative of entities. They should be able to add entities, move the initiative along, name the entities, and delete them as well
- Users are able to request more information on the HP, AC, Speed, Saves, and Initiative blocks from the "Character Sheet" window - By clicking on the dog ears present on these information block users are able to request more information about the blocks and edit information inside
- Users are able to take long and short rests - By clicking the "Short Rest" and or "Long Rest" buttons present on the "Character Sheet" window users can take rests, being prompted by a window
- Users can change program theme - using the drop down menu user can change the theme of the program, such as light mode, dark mode, etc
- Users need to have a save file for each character - analogous to a sheet of paper this will keep track of all his or her last saved values for said character
- Users need to be able to change the values of a character - through text boxes, he or she will be able to alter the character's values, after unlocking said boxes
- The software must not allow incorrect input - users should not be able to set their health too high, raise or lower skill levels to strange numbers, etc.
- The software must have all the important information found in the user's handbook - each part of the character should be laid out and described for the player, if so desired
- Different tabs for different information - a character is usually complex, having backstory, ability stores/feats, class and level, spells, proficiencies and an inventory. This data should be broken down logically into the different tabs: main, skills, equip, spells, ability
- Users have the ability to take notes - note taking is an important part of TTRPGs there should be a separate tab for these notes in the program

2.1.2. Non-Functional.

- Interchangeability - The program is easy for the developers to adapt to new TTRPG frameworks
- Speed of loading and saving - previous saves and the act of saving must load quickly for the user, in less than two seconds

2.2. Use Cases

Use Case Number: 1

Use Case Name: Closing the Program

Description: The use wants to close out of the program.

- User selects the "x" button on "Aetalag Tabletop RPG Asset Manager" window.
- User is prompted by a window, the "Close Program" window. The "Close Program" window has the message:
"Are you sure you want to leave?"
With these three buttons: "Save and Exit" "Exit Without Saving" and "Cancel"

Termination Outcome: If the user selects “Save and Exit”, all open sheets are saved, then the program closes all open windows.
If the user selects “Exit Without Saving”, the program closes all open windows. If the user selects “Cancel” the “Close Program” window is closed.

Alternative: User selects the “x” button on the “Close Program” window.

- User selects the “x” button on the “Close Program” window.

Termination Outcome: The “Close Program” window is closed, similar to the “Cancel” button.

Use Case Number: 2

Use Case Name: Adding a new entity to “HP Tracker”

Description: User wants to create a new entity to the “HP Tracker” section on the “Aetalag Tabletop RPG Asset Manager” window. Allowing them to quickly view HP.

- User Selects the “+” button present to the top right of the “HP Tracker” section of the “Aetalag Tabletop RPG Asset Manager” window.
- A new HP bar appears with the fillable fields: “Enter Name” and “0/0” as current and max health, which each can be edited.
- User fills out these fields.

Termination Outcome: User has a new filled HP tracker.

Use Case Number: 3

Use Case Name: Creating a Blank Character Sheet

Description: The user wants to create a new character from scratch (without using the “Make It Easy” functionality).

- User Selects “New Sheet” button on the “Aetalag Tabletop RPG Asset Manager” window.
- A blank sheet is opened in a new window.
- The user will then be able to fill out any blank fields in the sheet.

Termination Outcome: User has a new filled sheet.

Alternative: Sheet Manager window is already open

- User Selects “New” on the “Aetalag Tabletop RPG Asset Manager” window.
- A blank sheet is opened in a new window.
- The user will then be able to fill out any blank fields in the sheet.

2.3. Interface Mockups

3. Project Timeline

1) Requirements:

We plan to have all of our requirements established by the submission and review of the first project proposal draft on the 10th of February, 2020.

2) Design:

We plan for our major design decisions to be fleshed out by the end of February or early March.

3) Implementation:

We hope to have finished implementing the primary, promised functionality of “Aetalag Tabletop RPG Asset Manager” by the end of March or early April.

4) Verification:

We hope to have fixed all bugs and leaks by the end of April for the timely submission of the project.

5) Maintenance:

After the end of April, any additional functionality and systems could be added at any point in the future.

4. Project Structure

At first, this will be a little empty (it will need to be filled in by the time you turn in your final report). This is your chance to discuss all of your design decisions (consider this the README’s big brother).

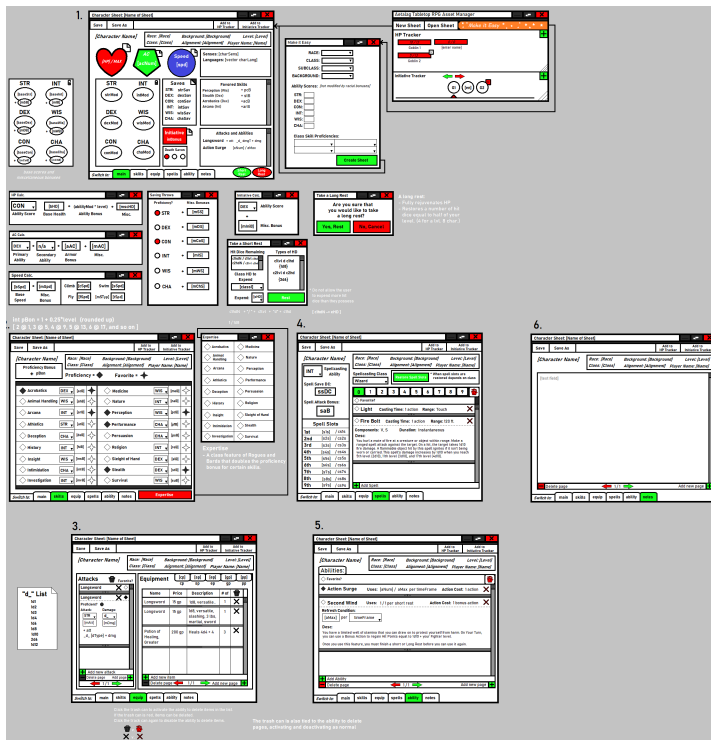


Figure 1. This is the entire user interface laid out.

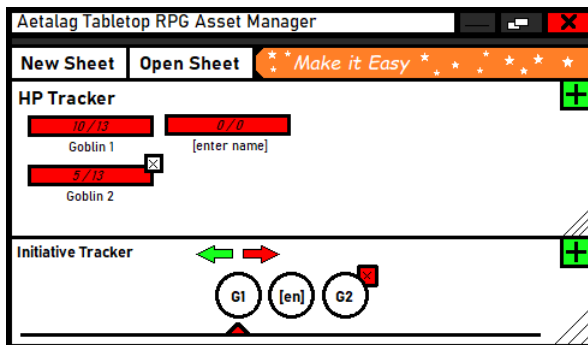


Figure 2. This is the window that the user will be welcomed with. Allowing them to take paths to all functionality. Has use cases 1, 2, and 3.

1. Character Sheet: [Name of Sheet]

Save Save As Add to HP Tracker Add to Initiative Tracker

[Character Name] Race: [Race] Background: [Background] Level: [Level]
Class: [Class] Alignment: [Alignment] Player Name: [Name]

HP [HP] / MAX AC [acNum] Speed [spd]

Senses: [charSens]
Languages: [vector charLang]

STR INT
[baseStr] [baseInt]
+ [mSB] + [mIB]

DEX WIS
[baseDex] [baseWis]
+ [mDB] + [mWB]

CON CHA
[baseCon] [baseCha]
+ [mCB] + [mCB]

base scores and miscellaneous bonuses

STR INT
strMod intMod

DEX WIS
dexMod wisMod

CON CHA
conMod chaMod

Saves
STR: strSav
DEX: dexSav
CON: conSav
INT: intSav
WIS: wisSav
CHA: chaSav

Initiative
inBonus

Death Saves
● ○ ○

Favored Skills
Perception (Wis) + pcB
Stealth (Dex) + stB
Acrobatics (Dex) + acB
Arcana (Int) + arB

Attacks and Abilities
Longsword + att _d_ dmgT + dmg
Action Surge [aNum] / aMax

Switch to: main skills equip spells ability notes

Short Rest Long Rest

Figure 3. This is the window that the user will use to interact with the most of their characters information. This is the result of use case 3.

Make it Easy

RACE:

CLASS:

SUBCLASS:

BACKGROUND:

Ability Scores: [not modified by racial bonuses]

STR:

DEX:

CON:

INT:

WIS:

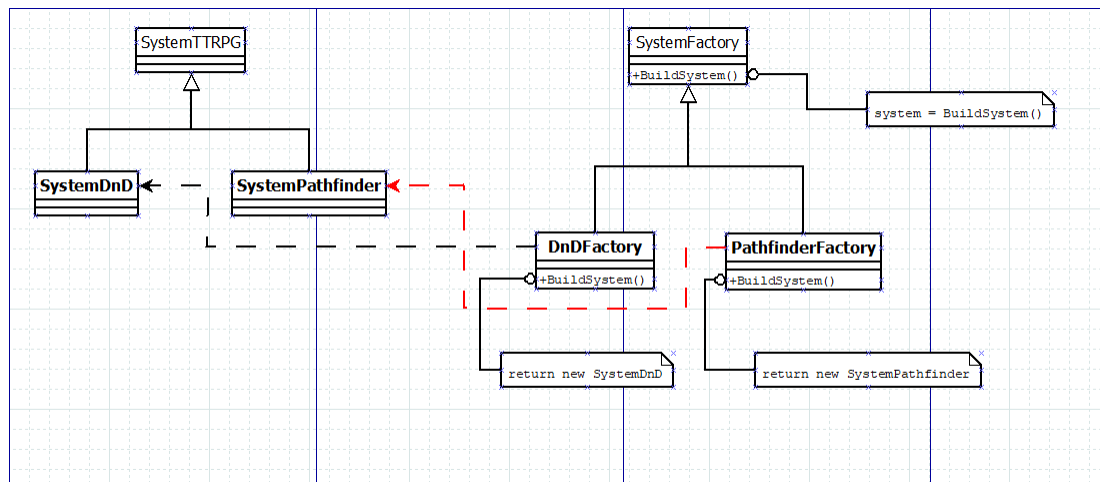
CHA:

Class Skill Proficiencies:

Create Sheet

Figure 4. This is the window that the user will use to create a character easily.

4.1. UML Outline



HP Calc.

CON

[bHD]

+

(abilityMod * level)

+

[mscHD]

Ability Score

Base Health

Ability Bonus

Misc.

AC Calc.

DEX

+

n/a

+

[aAC]

+

[mAC]

Primary Ability

Secondary Ability

Armor Bonus

Misc.

Speed Calc.

[bSpd]

+

[mSpd]

Climb

[cSpd]

Swim

[sSpd]

Fly

[fSpd]

[mSTyp]

[tSpd]

Base Speed

Misc. Bonus

Figure 5. These are the windows that are present from the dog eared, HP, AC, and Speed buttons.

Saving Throws

Proficiency?

Misc. Bonuses

STR

+

[mSS]

DEX

+

[mDS]

CON

+

[mCoS]

INT

+

[mIS]

WIS

+

[mWS]

CHA

+

[mChS]

Figure 6. This window comes from the dog ear of the "Saving Throws" subsection of the Character Sheet.

Initiative Calc.

DEX

Ability Score

+

[mIniB]

Misc. Bonus

Figure 7. This window comes from the dog ear of the "Initiative" subsection of the Character Sheet.

Take a Short Rest

Hit Dice Remaining

c1hdN / c1lvl c1hd

c2hdN / c2lvl c2hd

Class HD to Expend

[class]

Expend: [eHD]

Rest

Types of HD

c1lvl d c1hd {1d8}

c2lvl d c2hd {3d6}

Take a Long Rest

Are you sure that you would like to take a long rest?

Yes, Rest

No, Cancel

Figure 8. These windows come from the "Short Rest" and "Long Rest" buttons on the "Character Sheet" main window

[2 @ 1, 3 @ 3, 4 @ 7, 5 @ 13, 6 @ 17, and so on]

Character Sheet: [Name of Sheet]
Save Save As
Add to HP Tracker Add to Initiative Tracker

[Character Name]
Race: [Race] Background: [Background] Level: [Level]
Class: [Class] Alignment: [Alignment] Player Name: [Name]

Proficiency Bonus + pBon
Proficiency = Favorite =

Acrobatics	DEX	[acB]	Medicine	WIS	[meB]
Animal Handling	WIS	[ahB]	Nature	INT	[naB]
Arcana	INT	[arB]	Perception	WIS	[pcB]
Athletics	STR	[atB]	Performance	CHA	[ptB]
Deception	CHA	[deB]	Persuasion	CHA	[psB]
History	INT	[hiB]	Religion	INT	[reB]
Insight	WIS	[insB]	Sleight of Hand	DEX	[siB]
Intimidation	CHA	[intB]	Stealth	DEX	[stB]
Investigation	INT	[invB]	Survival	WIS	[suB]

Switch to: main skills equip spells ability notes Expertise

Expertise

Acrobatics	Medicine
Animal Handling	Nature
Arcana	Perception
Athletics	Performance
Deception	Persuasion
History	Religion
Insight	Sleight of Hand
Intimidation	Stealth
Investigation	Survival

Expertise
- A class feature of Rogues and Bards that doubles the proficiency bonus for certain skills.

Figure 9. This window comes from the "Skills" tab of the "Character Sheet" window.

Character Sheet: [Name of Sheet]
Save Save As
Add to HP Tracker Add to Initiative Tracker

[Character Name]
Race: [Race] Background: [Background] Level: [Level]
Class: [Class] Alignment: [Alignment] Player Name: [Name]

Attacks
Longsword
Longsword
Proficient?
Attack: STR Damage: d_
[mAtt] [mDmg]
+ att _d_ [dType] + dmg
Add new attack
Delete page Add page
1 / 1

Equipment
[cp] [sp] [ep] [gp] [pp]
cp sp ep gp pp

Name	Price	Description	# of	
Longsword	15 gp	1d8, versatile...	1	X
Longsword	15 gp	1d8, versatile, slashing, 3 lbs, martial, sword	1	X
Potion of Healing, Greater	200 gp	Heals 4d4 + 4	3	X

Add new item
Delete page 1 / 1 Add new page

Switch to: main skills equip spells ability notes

"d_" List
1d1
1d2
1d3
1d4
1d6
1d8
1d10
2d6
1d12

Figure 10. This window comes from the "Equip" tab of the "Character Sheet" window.

4.2. Design Patterns Used

Make sure to actually use at least 2 design patterns from this class. This is not normally part of such documentation, but largely just specific to this class – I want to see you use the patterns!

5. Results

This section will start out a little vague, but it should grow as your project evolves. With each deliverable you hand in, give me a final summary of where your project stands. By the end, this should be a reflective section discussing how many

Character Sheet: [Name of Sheet]

Save Save As Add to HP Tracker Add to Initiative Tracker

[Character Name] Race: [Race] Background: [Background] Level: [Level]
Class: [Class] Alignment: [Alignment] Player Name: [Name]

Spellcasting Class: Wizard Restore Spell Slots * When spell slots are restored depends on class

Spell Save DC: ssDC

Spell Attack Bonus: saB

Spell Slots	
1st	[s1s] / cs1s
2nd	[s2s] / cs2s
3rd	[s3s] / cs3s
4th	[s4s] / cs4s
5th	[s5s] / cs5s
6th	[s6s] / cs6s
7th	[s7s] / cs7s
8th	[s8s] / cs8s
9th	[s9s] / cs9s

Switch to: main skills equip **spells** ability notes

Figure 11. This window comes from the "Spells" tab of the "Character Sheet" window.

Character Sheet: [Name of Sheet]

Save Save As Add to HP Tracker Add to Initiative Tracker

[Character Name] Race: [Race] Background: [Background] Level: [Level]
Class: [Class] Alignment: [Alignment] Player Name: [Name]

Abilities:

◇ Favorite?

◆ Action Surge Uses: [aNum] / aMax per timeFrame Action Cost: 1 action

◇ Second Wind Uses: 1/1 per short rest Action Cost: 1 bonus action

Refresh Condition:
[aMax] per timeFrame

Desc:
You have a limited well of stamina that you can draw on to protect yourself from harm. On Your Turn, you can use a Bonus Action to regain Hit Points equal to 1d10 + your Fighter level.
Once you use this feature, you must finish a short or Long Rest before you can use it again.

Add Ability Delete page 1/1 Add new page

Switch to: main skills equip spells **ability** notes

Figure 12. This window comes from the "Ability" tab of the "Character Sheet" window.

of your original goals you managed to attain/how many desired use cases you implemented/how many extra features you added.

5.1. Future Work

Where are you going next with your project? For early deliverables, what are your next steps? (HINT: you will typically want to look back at your timeline and evaluate: did you meet your expected goals? Are you ahead of schedule? Did you decide to shift gears and implement a new feature?) By the end, what do you plan on doing with this project? Will you try to sell it? Set it on fire? Link to it on your resume and forget it exists?

Character Sheet: [Name of Sheet]

Save

Save As

Add to HP Tracker

Add to Initiative Tracker

[Character Name]

Race: [Race]

Background: [Background]

Level: [Level]

Class: [Class]

Alignment: [Alignment]

Player Name: [Name]

[text field]

Delete page

1 / 1

Add new page

Switch to:

main

skills

equip

spells

ability

notes

Figure 13. This window comes from the "Notes" tab of the "Character Sheet" window.

References

- [1] H. Kopka and P. W. Daly, *A Guide to L^AT_EX*, 3rd ed. Harlow, England: Addison-Wesley, 1999.