

Project Idea:

The project I am passionate is to make a Dungeons and Dragons (DnD) character sheet that functions as a dice roller and a stat tracker. DnD character sheets consist of main attributes as follow. Strength, Dexterity, Constitution, Intelligence, Wisdom and Charisma. Those range from 1-20 any number above 10 that increases in increments of 2 gets a +1 added to their ability checks. Those that are below 10 decrease in increments of 2 they get -1. For example If strength is 14 it gets a +2 to ability checks. If Dexterity is 8 it gets a -1 to ability checks. Most ability checks are rolled with a dice with 20 sides (D20) other die are D12 D10 D8 D6 D4 D2 and D100.

The reason I am motivated is that I play DnD with my friends and have a lot of fun doing so. All the online/app character sheets that exists usually require a payment or don't offer the recourses that I need. There are 9.5 million players of the 5th edition of DnD worldwide and I feel like the community is lacking a proper online character sheet that provides a service of storing weapon stats and character attributes.

Base DnD stats as listed above are the main source of how the game is played by a certain character. With that said the base stats reflect other skills that rely on the base stats those being: Acrobatics (dex), Animal Handling(wis), Arcana(int), Athletics(str), insight(wis) and many more. As well as saving throws that profit from the modifiers of the base stats. Saving throws are in the same category as the base stats .If Strength is 20 then saving throw of strength gets a +5 to its roll. The products I want to design takes all these numbers in and sorts them into its relevant data types in this case being numerical. Different weapon types and tools do different type of damage so my product would need to differentiate it. One weapon might scale with strength and another with dexterity as well as spells most of the time scale with your intelligence. With that said you also add your proficiency modifier to the roll plus your modifier for the type of weapon/spell used. Of course for items such as weapons it would need to separate the data types between the item name and the damage to add the damage. Rolls to see if the attack hit are a separate roll thus needing to also add the needed modifiers to it. I would also have to consider inspiration that other players might give the character and add that to the number. Inspiration being a number/roll of a certain die.

In order to achieve this I would have to design a character sheet that has separate roles for each data type and essentially sort the weapons and spell type (str, dex, int, cha) into their respective categories. By doing so the user can simply attack and roll for both the attack and damage with their modifiers already added by the program. I am not certain if I want a mobile or a web based program as the design would have to differ for both because of the screen space limit on mobile vs a computer monitor. If I were to make it in a browser it would be a lot easier as I can design a character sheet similar to the character sheets out there and add the necessary buttons that would perform the function that I need it to do. If I were to go for a unique design, I could have an are in the middle that displays the rolls characters make. For example the sheet would have 2 different modes Roll and Edit. In roll mode you can click on a type of roll you want to make. If you were making a strength saving throw you'd just click on the strength saving throw and that the dice would roll and add the necessary modifiers, then display the total outcome. For other dice I would have buttons that simply show the outcome of the roll without modifiers as most of the other dice don't get affected by them. For a damage roll the program would know what weapon the character is using and add the required modifiers to the roll. Is the user needs to roll multiple of the same die the program would simply have an up or down counter to increase or decrease the number of dice.

For mobile app it would have to span across multiple pages or have a zoom out and in feature for ease.

Tools and technology for developing this program I would use are Python for coding the maths behind the rolls and the addition of relevant data to each role. As well as using python to display the names of each data type(strength, dexterity, intelligence and so on) and assigning the weapon damage type. I feel like python would be the easiest because it's the only programming language I know. In terms of design I would use Paint3D as it I am familiar with the program and have confidence in creating a design that would suit the program.

<https://apps.microsoft.com/store/detail/paint-3d/9NBLGGH5FV99>

<https://www.python.org/>

The skills required for development of this program are the ability to use Python and Paint3D. It is extremely likely that anyone can do this through practise and tutorials and have the level of understanding of both programs in order to achieve the goal. I believe it that the hardest part of this would be writing the code for the program.