

CaptureAge Recruitment: Senior Engineer (Tooling) Test

Congratulations on making it to this stage of our recruitment and thank you for your continued interest in joining CaptureAge!

Please take your time to read through the instructions carefully before submitting your solution.

The recommended amount of time for this test is maximum 3-4 hours. Try to keep your work within the set timeframe.

Please send us your solution in the form of a public GitHub repository linked in an email within 48 hours from when you received these instructions. Include a copy of this PDF file in your repository as well.

If you have any questions, just let us know - Good luck and have fun building your tool!

Task

Note: This is a made-up scenario for the test and not an actual project we're working on at the company.

We're designing a totally original and unique Table Top Roleplaying Game called "**Dragons and Dungeons**" and we need your help. Our designers have laid out a spec for how characters should work but they don't have a quick way to create and test different types of characters.

That's where you come in! We need you to build a tool that can generate characters according to their specification. You can use any language/tech stack you wish to build this tool.

Tool Requirements

- Users should be able to generate a valid **Dragons and Dungeons** character based on the spec provided below.
- Users should be able to see previously generated characters
- Users should be able to share their characters with other designers
- The designers are extremely fickle and as a result, they want to be able to change class and race definitions without the code needing to be changed. Provide a way where the designer can add new races and classes as well as update the following properties:
 - Race
 - Minimum Stat
 - Modifiers
 - Racial Ability (Simply a name)
 - Allowed Classes
 - Class
 - Hit Dice
 - Prime Stat
- Optional: If you met the previous requirements, feel free to add any other features you think would be cool!

Character Spec

Name: All characters need a name!

Ability Scores:

- STR: Strength
- INT: Intelligence
- WIS: Wisdom
- DEX: Dexterity
- CON: Constitution

- CHA: Charisma

All ability scores are chosen by rolling 3 6 sided dice (3d6) and adding them together, for example, if you rolled 5, 4, 3 for STR then the final stat would be 12. Ability Scores should be shown both with and without any race modifiers.

Race: Chosen from the following table, making sure the minimum stat requirements are met

Race	Minimum Stat	Modifier	Racial Ability	Allowed Classes
Dwarf	CON 9	-1 CHA, +1 CON	Infravision	Bard, Cleric, Fighter, Thief
Elf	INT 9	-1 CON, +1 DEX	Detect Secret Doors	Cleric, Druid, Fighter, Wizard, Ranger, Thief
Gnome	CON 9, INT 9	None	Defensive Bonus	Cleric, Fighter, Thief, Wizard
Halfling	CON 9, DEX 9	+1 DEX, -1 STR	Initiative Bonus	Bard, Druid, Fighter, Thief
Human	None	None	None	All

Class: Select a class, and display the prime stat

Class	Hit Dice	Prime Stat
Bard	1d6	CHA
Cleric	1d6	WIS
Druid	1d6	WIS
Fighter	1d8	STR
Ranger	1d8	STR
Thief	1d4	DEX
Wizard	1d4	INT

Hit Points: Roll the class hit dice and then add your constitution modifier. Minimum 1. The CON mod is as follows:

CON	MOD
3	-3
4-5	-2
6-8	-1
9-12	None
13-15	+1
16-17	+2
18	+3

Starting Gold: 3d6 * 10

