Realistic Character Progression

(vector based character advancement)

[IMAGE OF PROTOTYPE]

Creator:

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Technical Field

Game Programming.

Background Information

My favorite game genre is RPG. Most RPGs today are either based off of experience or skill values, I want to make a system that allows you to progress more based on how you play, than being focused on increasing a certain skill to gain stat points.

Prior Art (legal term)

There are a few games right now that generate levels, and then give stat points based on how many skill levels you have gained over the course of a particular character level, The Elder Scrolls series is probably the best example, and possibly Ultima Online, though I don't know a lot about that one. In TES games, you "gain experience" by using skills, each time you level up a skill, you gain some progress towards leveling your character. Once you have gained enough skill increases to level your character, you then get some skill points based on what skills you increased during the current level.

Project Description

On the visible side, my project will eliminate leveling in this manner, instead your character level will be the average of your stats values, with everything you do in game having some sort of effect on your stats, weather positive or negative. The code side will be multi-dimensional vector manipulation to handle stat gains and calculations, instead of everything just using arrays.

Innovation Claim

The innovation on this project is going to come mostly from using and manipulating vectors to handle stats instead of arrays, but I also feel like there are no games currently that allow you to handle stats the way I am talking about for this project.

Usage Scenario

This could be used for nearly any new game that has any form of character development at all. It is basically just a different way to handle existing systems.

Evaluation Criteria

The following questions will identify the successful completion of the project.

Does the system work as intended?

Are character stats handled as dimensional vectors?

Can enemies be generated by averaging character stat vectors?

Did we code instances for most conceivable actions in the game?

Objectives and Tasks Associated with the Project

Create a sort of "Sand Box" testing area.

Basically, this means creating a play area that allows us to test the mechanics as implemented.

Code action based stat changes.

This will be the basic creation of the character template, along with setting up methods to modify character stats using vectors.

Define possible actions that will cause stat changes.

Thought exercise. This step will be just creating a list of possible actions, to be coded in the next section

Code all actions into stat modifiers using vector math.

This section is generating the code to apply stat modifiers based on actions listed in the previous section.

Description of Design Prototype

This will be presented as sort of a "working level" with the advancement mechanic built into playable character, either using Unity or as a standalone app for PC.

Evaluation Plan

The first section will be sort of easy, if we have an area that we can move the character around, and generates enemies to be able to test the mechanic it will be fulfilled.

The second part will be evaluated on weather or not the system actually works. If we have a lot of bugs for example, it will not be completed.

The next part is based off of code, if the characters' stats are coded to use multi dimensional vectors and vector manipulation 1- 15-2023 this section will be completed.

Another easy evaluation, this section simply requires enemies to be generated based off of what stats player characters have. As of right now I plan on doing this by getting the total value of all stats, and then using some RNG to generate each value as a % of total. 1-15-2023

The last section is going to be the most complicated. We will have to do a lot of testing and try to come up with actions that were not planned for, but once we are satisfied that all conceivable instances have been addressed it will be complete.

Project Completion Assessment

Note: This section must completed prior to SIP403/409.

As of right now, This has barely been started, In the next few weeks I will have a lot of work to do on it, I am currently working on gathering assets to build a quick "test level" because I have an aversion to unity cubes.   1-10-2023

Appendices

Note: While students are encouraged to start citing their sources as soon as SIP311, this section must completed prior to SIP403/409. For SIP402 (or SIP408), use this as a way to share your progress TOWARDS completion with your SME

Include as appendices any supporting material for this project, including charts, graphs, and other data; images associated with the project; or other documentation (e.g., a game design document or read-me file). Include any prior art that was used such as U.S. Patent Documents, Foreign Patent Documents, or other sources. Remember that this section should only be a list of additional files, not the actual data of the files!

Use the following format:

Appendix letter: description of item – file name

Example…

Appendix A: Game design document – myGameDoc.docx

Appendix B: 3D render of primary character – mainCharacter.jpg

Appendix C: References

       Author. (date). etc, following APA style.