

Requirements - RPG

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General

Introduction and end goal. This game is meant to simulate an RPG centric 'dungeon crawler' type game, where you get to (lightly) customize your character, fight enemies, level up, get stronger, lose, and do it all over again! Enemies should get harder each subsequent floor. The combat in the game should be turn based. The end goal of the game should be a 'Final Boss' or sorts that is meant to test the culmination of your strength to that point. If you defeat the Final Boss, you win. If you lose against the Final Boss, you do not go back to the first floor, you lose and the game is over! Number and Power balancing should be up to you, just be sure that it is something interesting enough to facilitate moving through a dungeon as an adventurer! The most important thing is to have fun with it, so please take the time to make this your own, and add as much flare to it as you would like.

Requirements

Below are some of the functional requirements for the application.

RPG-simulator

- You must be able to choose a class for your character (or have it assigned randomly), each class has a different subset of skills or magic. A class would constitute something along the lines of 'fighter', 'mage', 'thief', get creative with it!
- You should be able to choose a type for your character (or have it assigned randomly), each race should have one passive skill that gets better after leveling up or that gives them advantage over another. A type would constitute something like, 'orc', 'elf', 'dwarf', 'human'. Perhaps orcs are stronger naturally, perhaps elves are the most nimble and can dodge better, maybe humans have less HP but gain exp at a faster, get creative with it!
- You should encounter a randomly generated 'small' enemy every floor, a 'medium' enemy every 5 floors, and a 'BOSS' every 10 floors.
- Your character should be able to equip items such as a sword, shield, helmet, armor, boots, etc. Your character should be able to equip a minimum of 3 unique item types. You get to decide what happens if you come across a second item type. For example, if you have 3 different swords you have programmed, and you have one equipped and come across another, does it automatically replace the old one? Does it compare stats and pick the better one? What happens if you don't take it? If

you only have one sword programmed and you already have one equipped and come across a new one, what happens?

- After each battle you should have a small chance to find a chest that contains items such as armor/money/potions, or a shop where you can spend your money.
- The shop should sell 3 random objects, weapons, magic scrolls (good for one use), potions (good for one use), instant level up (RARE), get creative with it.
- Potions should never give more Health or Mana than you have as a maximum.
- After each floor (and after each possible random encounter with a shop) you should go back to the top floor if your health is below 15%. Going to the top floor gives you back all of your health and mana
- All enemies should get harder for each floor you travel to, for example, an enemy on floor 2 should be much, much weaker than an enemy on floor 48!
- The game should run on cycles. A cycle is considered to be 4 parts. Q1, Q2, Q3, and Q4.
- Each part should last around 3-5 floors have it's own event (use your creativity, here's a few examples to get started)
 - Q1 - Physical attacks always deal X amount less damage
 - Q2 - 5% chance to take a second turn in a row (applies to enemies as well
 - Q3 - gain extra money!
- Your character should have at minimum:
 - Stats: Attack, Health, Mana/Other Resource such as cooldown, Defense, and speed. Others can be added.
 - Should have at least 1 skill or magic power they can use
 - Physical attacks should have a chance to critically strike (double damage)
 - All attacks should have a chance to fail/miss
 - Attacks should deal a min damage of 1
- You gain experience from winning battles, at certain thresholds you should be able to choose a skill or magic power to upgrade. For example:
 - Lvl 1: Strike
 - Lvl 10: Double Strike
- Lvl 15: Triple Strike NOTE: Leveling up should only happen when at the top floor. For example, if I have 300 experience and go back to the top floor and I'm level 1 (previous experience cap = 0), if we assume the experience to level up is $10 * 2 * \text{current level} + \text{previous experience cap}$.

Example:

- Level 1, it would be $10 * 2 * 1 + 0$ (since there was no previous level = 20 (300 total exp - 20, so now 280)

- Level 2 would be $10 * 2 * 2 + 20 = 60$ (220 remain) Overall, you should level up 3 times with 100 exp left over towards the next level. (JUST AN EXAMPLE, YOU CAN USE YOUR OWN FORMULAS)
- During combat:
 - Attacks and item usage should happen in a turn based fashion, the participant with the highest speed should go first.
 - When a participant reaches 0 or less HP, they lose the fight, if the loser is you, you lose an amount of money and go back to the top floor and only gain 20
 - During either participants turn, they can either attack or use a consumable item.
- Your simulation should include at least 3 temporary status effect and at least 1 permanent status effect that either hinders or helps your character in some way. Status effects could include: poisoned, burned, asleep, paralyzed, strengthened, quickened, crippled, bleeding, cursed, etc.

It is all purposefully pretty wide open to give you more options and have you think about things more. You can be creative on this; if you like a different idea better, go for it. It is more about having a rough framework in which you want to work and doing something fun with implementing Design Patterns than the particular requirements.

Some HINTS (not requirements):

- You could use decorator pattern for evolutions.
- To build new code-a-mon or trainers you could use the factory pattern.
- The simulation should be tick-based. (Mediator pattern). Each tick something should happen, the trainer battles, catches new code-a-mon, purchases items, etc.