Paithon's Gacha!

Your Gachapon to Victory, where Paithon is Your Guide!

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I. Problem Statement

We noticed that some scholars love playing games, but they don't enjoy creating games as much in Python. We also noticed that many of them love gacha games. We tried to think of a creative way to implement learning Python concepts while playing games, so we took inspiration from one of our favourite games, Genshin Impact, to create an educational and fun game for scholars.

II. Project Objectives

- Create a text-based Gacha program in Python that features characters and weapons from Genshin Impact
- Implement probabilities and possibly a pity system
- Help scholars relax
- Help scholars learn Python code concepts through minigames
- Motivate scholars to learn coding concepts

III. Planned Features

The project's main focus is on creating a gacha system or obtaining the characters and/or weapons required via doing a "10 pull" in the limited banner shown in the program to satisfy the user's intent. The game will have a guide character named "Paithon", a reference to the Genshin guide character "Paimon". Paithon will lead the players through the game, congratulate them when they obtain a 5-star, and bid farewell when the player leaves. Essentially, Paithon is the player's friend. The program features an in-game currency called "Primogems" that will serve as the required "key" to make a wish on the banner. By doing a 10 pull, the program will immediately subtract 1,600 Primogems from the user's inventory in exchange for 3-star weapons (at most 9) and a guaranteed 4-star (that of either a weapon or a character), or possibly the featured limited 5-star, which has a low rate of appearing.

Since the program deducts 1,600 Primogems from the user every 10 pulls, the project will then feature a set of minigames that the user will have to complete in order to obtain the desired amount of Primogems that will satisfy their needs. The featured minigames, such as 'Python Quiz Bee!', "Unscramble the Word", and more, are presented to help the user gain rewards in a way that will also help them learn as they progress through their chosen minigame. The games highlight lessons about basic coding skills in Python. This will help learners to review and/or learn about a new, unheard-of lesson in basic programming.

The minigames will feature three difficulties: “Formative Assessment (Easy)”, “Long Test (Medium)”, and “Summative Assessment (Hard)”. The higher the difficulty level is, the greater the rewards (Primogems) the user will receive. These rewards will help the user stay motivated to both learn and obtain characters in this luck-based game.

IV. Planned Inputs and Outputs

Inputs:

1. Game Menu choice
2. Primogems (in-game currency)
3. Quiz answers

Outputs:

1. List of obtained Characters/Weapons
2. Inventory tracking (includes characters, weapons, and Primogems)

V. Logic Plan

1. Game menu screen containing 4 options: Start, How to play, Credits, and Quit.
2. If the player chooses start, the player will input their name from an input statement
3. Player will play educational minigames, such as unscramble the word, to obtain in-game currency (Primogems)
4. When the player has enough Primogems to wish on the banner, they’ll input their primogems and make a 10x wish. This deducts 1,600 primogems from their inventory.
5. After wishing, a 4-star weapon or character is guaranteed, whether off-banner or on-banner. The rest of the wishes have chances, 3-star being the most common, 4-stars next, and the 5-stars being the least common. When a golden star is present, there’s a 50/50 chance of obtaining a limited on-banner 5-star or a standard off-banner 5-star.
6. If the player chooses How to Play: print statement containing "Paithon: Hello player! In this game, you must play minigames to obtain Primogems in order to wish on the current banner. You need 1,600 Primogems to wish. Good luck!”
7. If the player chooses Credits: ASCII Art containing “Monica Abalos”, “Lianne Agramos”, and “Jacy Baguis” presented through scrolling credits using time.sleep.
8. If the player chooses to Quit: the program ends, and Paithon bids farewell.