CS50 P FINAL PROJECT

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Genshin Impact Wish Simulator

A console-based simulation of the Genshin Impact gacha system,

written in Python

Key Features:

– Crystal top-up & spending tracker

– Standard and featured wish banners

– Pity mechanics (4★/5★ guarantee)

– Characters and equipment collection tracking

– Duplicate count handling

Main Menu

Welcome to Genshin Impact wish simulator!
Crystals: 0
Money Spent: Rp 0
Total standard banner pull: 0
Total featured banner pull: 0

Menu:
1. Top Up Crystals
2. Standard Banner Wish
3. Featured Banner Wish
4. Characters
5. Equipment
6. Exit

Select menu: 1

Top Up Crystals

```
        1. Genesis Crystals x60 [Rp 16,500]
        2. Genesis Crystals x300 [Rp 81,000]
        3. Genesis Crystals x980 [Rp 255,000]
        4. Genesis Crystals x1980 [Rp 489,000]
        5. Genesis Crystals x3280 [Rp 815,000]
        6. Genesis Crystals x6480 [Rp 1,629,000]
        7. Main Menu

Choose topup package: 6

Top up successful!.
Total money spent: Rp 1,629,000
```

Featured Banner Wish

```
Welcome to Genshin Impact wish simulator!
Crystals: 6,480
Money Spent: Rp 1,629,000
Total standard banner pull: 0
Total featured banner pull: 0

Menu:
1. Top Up Crystals
2. Standard Banner Wish
3. Featured Banner Wish
4. Characters
5. Equipment
6. Exit

Select menu: 3

        1. 1x Wish
        2. 10x Wishes
        3. Main Menu

Select: 2
```

Featured Banner Wish Result

★★★ - Claymore - Bloodtainted Greatsword
★★★ - Sword - Traveler's Handy Sword
★★★ - Bow - Recurve Bow
★★★ - Bow - Messenger
★★★ - Sword - Harbinger of Dawn
★★★ - Catalyst - Magic Guide
★★★ - Polearm - White Tassel
★★★ - Sword - Fillet Blade
★★★ - Sword - Cool Steel
★★★★ - Hydro - Sword - Xingqiu

    1. 1x Wish
    2. 10x Wishes
    3. Main Menu

Insufficient Crystals

```
   1. 1x Wish
   2. 10x Wishes
   3. Main Menu

Select: 2

Insufficient crystals. Please top up.
```

View Characters Collection

Welcome to Genshin Impact wish simulator!
Crystals: 80
Money Spent: Rp 1,629,000
Total standard banner pull: 0
Total featured banner pull: 40

    Menu:
    1. Top Up Crystals
    2. Standard Banner Wish
    3. Featured Banner Wish
    4. Characters
    5. Equipment
    6. Exit

Select menu: 4

Your Characters:
★★★★ - Electro - Claymore - Beidou - x1
★★★★ - Electro - Bow - Fischl - x1
★★★★ - Hydro - Catalyst - Barbara - x1
★★★★ - Hydro - Sword - Xingqiu - x1

View Equipment Collection

Welcome to Genshin Impact wish simulator!
Crystals: 80
Money Spent: Rp 1,629,000
Total standard banner pull: 0
Total featured banner pull: 40

    Menu:
    1. Top Up Crystals
    2. Standard Banner Wish
    3. Featured Banner Wish
    4. Characters
    5. Equipment
    6. Exit

Select menu: 5

Your Equipment:
★★★★ - Polearm - Crescent Pike - x1
★★★ - Bow - Messenger - x3
★★★ - Bow - Raven Bow - x1
★★★ - Bow - Recurve Bow - x3
★★★ - Bow - Sharpshooter's Oath - x1
★★★ - Bow - Slingshot - x1
★★★ - Catalyst - Emerald Orb - x1
★★★ - Catalyst - Magic Guide - x1
★★★ - Catalyst - Otherworldly Story - x3
★★★ - Catalyst - Twin Nephrite - x2
★★★ - Claymore - Bloodtainted Greatsword - x2
★★★ - Claymore - Debate Club - x2
★★★ - Claymore - Ferrous Shadow - x2
★★★ - Claymore - Skyrider Greatsword - x1
★★★ - Polearm - Halberd - x2
★★★ - Polearm - White Tassel - x3
★★★ - Sword - Cool Steel - x1
★★★ - Sword - Dark Iron Sword - x1
★★★ - Sword - Fillet Blade - x1
★★★ - Sword - Harbinger of Dawn - x2
★★★ - Sword - Skyrider Sword - x1
★★★ - Sword - Traveler's Handy Sword - x1

Final Summary

Thanks for playing! Here's your total pull and every characters & equipment that you have collected so far:
Total standard banner pull: 0"
Total featured banner pull: 40
Total money spent: Rp 1,629,000

Your Characters:
★★★★ - Electro - Bow - Fischl - x1
★★★★ - Geo - Catalyst - Ningguang - x1
★★★★ - Pyro - Polearm - Xiangling - x1

Your Equipment:
★★★★ - Catalyst - Blackcliff Agate - x1
★★★ - Bow - Messenger - x2
★★★ - Bow - Recurve Bow - x1
★★★ - Bow - Sharpshooter's Oath - x2
★★★ - Catalyst - Emerald Orb - x2
★★★ - Catalyst - Magic Guide - x1
★★★ - Catalyst - Otherworldly Story - x3
★★★ - Catalyst - Thrilling Tales of Dragon Slayers - x2
★★★ - Catalyst - Twin Nephrite - x1
★★★ - Claymore - Debate Club - x4
★★★ - Claymore - Ferrous Shadow - x3
★★★ - Claymore - White Iron Greatsword - x2
★★★ - Polearm - Black Tassel - x1
★★★ - Polearm - White Tassel - x2
★★★ - Sword - Cool Steel - x3
★★★ - Sword - Dark Iron Sword - x1
★★★ - Sword - Fillet Blade - x2
★★★ - Sword - Skyrider Sword - x2
★★★ - Sword - Traveler's Handy Sword - x2

Testing and Validation

– Unit tested with `pytest` and `unittest.mock.patch`

– Validates all major functions

– Menu options looping

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by Erick Khosasi

Thank You
For Your Attention