Republic of the Philippines

Bicol University Polangui

Polangui, Albay

NAME: Charls Emil C. Barquin

SUBJECT: Data Structures and Algorithm

COURSE, YEAR & SECTION: BSIS-2A

PROFESSOR: Khristine Botin

Title: The Witchcraft's Defense

Theme: Use the power of even and odd numbers to create the perfect potions to beat the monstrous foe.

Learning Objectives: Participants will learn to maximize the limited resources and strategize to beat the monstrous foe of the game. The mini heap challenge will involve critical thinking and decision making.

Tasks:

1. Select 3 odd numbers for offensive potion and 3 even numbers for defensive potion and display them.
2. Convert the heap into ascending and descending and separate the numbers into odd groups and even groups.
3. Generate a random number from 120-250 and try to defeat the foe with the total numbers of the odd and even potions.

Instructions:

- **Input:** 1, 5, 2, 4, 11, 12
- **Output:** Sorted Offensive (Odd) Numbers: 1, 5, 11
  Sorted Defensive (Even) Numbers: 2, 4, 12
  A monstrous foe with a power level of 146 appears!
  Your combined magic power is 35.
- **Odd Number:** 1, 5, 11
- **Even Number:** 2, 4, 12

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Summary

This C++ program implements the "Witchcraft Heap Game," where the player selects numbers to combat a monster. The game generates 15 unique random odd numbers and 15 unique random even numbers between 1 and 50, then combines and displays them to the player. The player is prompted to choose 3 odd (offensive) and 3 even (defensive) numbers from these lists. The sum of the selected numbers represents the player's magic power, which is compared against a randomly generated monster power to determine the game's outcome.

Code Analysis

Inputs

- User inputs six numbers from the summoned list:
  - Three odd numbers between 1 and 50 for offensive spells.
  - Three even numbers between 1 and 50 for defensive spells.

Flow

1. Generates 15 unique random odd and 15 unique random even numbers between 1 and 50.
2. Combines and displays these numbers to the player.
3. Prompts the player to select 3 odd and 3 even numbers, ensuring valid inputs.
4. Calculates the player's magic power by summing the selected numbers.
5. Compares the player's power against a randomly generated monster power to decide the outcome.

Outputs

- Displays the summoned numbers and game instructions.
- Provides feedback and confirmation for user inputs.
- Shows sorted selected numbers and the player's total magic power.
- Announces the monster's power level.
- Informs the player of the result (win, lose a life, tie) and remaining attempts.