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SUBJECT: DATA STRUCTURES AND ALGORITHMS

COURSE/YR: BSIS-2A

PROFESSOR: KHRISTINE BOTIN

Title:

"Witch Craft Treasure Hunt Game: A Battle of Numbers!"

Theme:

Embark on a thrilling adventure to defeat a powerful monster using your mathematical wits and decision-making skills! Your task is to choose the most powerful set of mystical numbers odd for offense and even for defense to overcome the beast. Balance strategy and calculation to emerge victorious in this treasure hunt challenge.

Learning Objectives:

By playing this game, participants will:

1. **Enhance Logical Thinking:** Develop the ability to analyze and choose the best options within constraints.
2. **Practice Basic Math Skills:** Improve addition and parity (odd/even) recognition.
3. **Learn Iterative Problem-Solving:** Understand trial-and-error strategies and adapt based on outcomes.
4. **Understand Randomness in Programming:** Explore random number generation and its application.
5. **Improve Attention to Detail:** Select numbers carefully from a list while considering game rules.

Tasks and Instructions:

Game Setup:

1. You are presented with **30 mystical numbers**, 15 odd and 15 even.
2. Your goal is to **defeat a monster** by selecting numbers that make your total power greater than the monster's randomly generated power level (between **120 and 250**).

How to Play:

1. **Choosing Numbers:**
 - Select **3 odd numbers (offensive spells)** from the list of mystical numbers.
 - Select **3 even numbers (defensive spells)** from the list.
2. **Power Calculation:**
 - The **total power** of your spells is the sum of the numbers you choose.
 - The monster's power level will be revealed after your selections.
3. **Winning Conditions:**
 - If your **total power is greater than the monster's power**, you win the game.
 - If your power equals the monster's, it's a tie, and the monster retreats.
 - If your power is less, you lose that round.
4. **Attempts:**
 - You have **2 attempts** to defeat the monster. If you fail, the game ends.

Game Instructions:

1. Review the list of numbers carefully.
2. Input your chosen numbers one at a time when prompted.
3. Follow the rules for choosing:
 - Odd numbers for offensive spells.
 - Even numbers for defensive spells.
4. After each round, review the results and adjust your strategy if needed.
5. Defeat the monster within two attempts to win the game!

Example Scenario:

1. The list of mystical numbers includes:
 - Odd: 3, 15, 21, 35, 47...
 - Even: 4, 16, 24, 40, 48...
2. You choose:
 - Odd: **35, 21, 15**
 - Even: **48, 40, 16**
3. Total Power = $35+21+15+48+40+16=175$
 $35 + 21 + 15 + 48 + 40 + 16 = 175$
4. Monster Power = **160**
5. Result: Your power (175) is greater than the monster's power (160). **You win!**

Tips for Success:

- Choose the **highest values** from the available numbers for both odd and even selections.
- Keep track of used numbers; once selected, they are removed from the list.
- Pay attention to your remaining attempts and adapt your choices based on the monster's power from previous rounds.