
Question 1:

Write a Python program that generates a random number between 1 and 100. The user has to guess the number, and the program provides hints (higher or lower) until the correct number is guessed. Using random number generation, loops (while), conditional statements, input/output

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Question 2:

Write a function that takes a string as input and returns a version with each word capitalized and a full stop added at the end (if not already present). Constraints: Use character-by-character processing and string concatenation, avoiding slicing and string methods like upper(), title() and endswith().

Question 3:

Write a function that takes a string as input and returns True if it's a palindrome (reads the same backward as forward), False otherwise.

Constraints: Use only individual character comparisons and string reversal techniques, avoiding slicing and built-in functions like reversed().

Question 4:

A local bakery employs three bakers with varying hourly rates and overtime rules:

- Baker 1:
    - $15.00 per hour for regular hours
    - Time-and-a-half for hours over 35
- Baker 2:
    - $16.25 per hour for regular hours
    - Double-time for hours over 40
- Baker 3:
    - $17.75 per hour for regular hours
    - Time-and-a-half for hours up to 45
    - Double-time for hours over 45

Write a Python program that does the following:

1. Asks for the number of hours worked by each baker last week.
2. Stores this information in separate variables.
3. Determines each baker's gross pay based on their respective pay rates and overtime rules. Consider the different thresholds for overtime pay.

4. Applies a 30% tax rate to each baker's gross pay.
5. Subtracts the calculated taxes from each baker's gross pay to determine their net pay.
6. Displays each baker's hours worked, gross pay, taxes, and net pay in a clear and organized format, using appropriate labels.

Question 5:

A hotel offers various room types with different pricing structures:

- Standard Room:
  - $155 per night for single occupancy
  - $160 per night for double occupancy
  - $165 per night for triple or more occupancy
- Deluxe Room:
  - $195 per night for single or double occupancy
  - $210 per night for triple occupancy
  - $225 per night for quadruple or more occupancy
- Additional charges:
  - 12% tax on room charges
  - $15 per person per day for breakfast (optional)
  - $25 per day for parking (optional)
- Discounts:
  - 10% off for stays longer than 5 nights

Write a Python program that:

1. Prompts for user input:
   a. Room type (Standard or Deluxe)
   b. Number of nights
   c. Number of people
   d. Meal charges (if any)
2. Calculates room charges: Uses appropriate conditional statements to determine the correct rates based on room type and occupancy.
3. Calculates additional charges: Includes taxes, breakfast charges (if applicable), and other service charges.
4. Generates a detailed bill: Clearly lists each charge with a descriptive label (e.g., room rate, tax, breakfast, parking).
5. Provides a subtotal of charges before tax.
6. Displays the total amount due, including all taxes and fees.