Python Basic
Time: 5:15pm-6:45pm

Fun with Loops: Python Homework Assignment

Problem Set 1: Working with Loops

Problem 1: While Loop Practice

1. Write a program that takes an integer as input and prints its multiplication table using a while loop.

Problem 2: For Loop Challenges

2. Given a list of numbers, find and print the sum of all even numbers using a for loop.

3. Create a list of names. Using a for loop, print each name in uppercase.

4. Given a list of numbers, use a for loop to calculate and print the square of each number.

Problem 3: Tuple Challenges

5. Create a tuple of your favorite foods. Print the length of the tuple.

6. Given a tuple of temperatures in Celsius, convert and print them in Fahrenheit using a for loop.

Problem Set 2: Loop Control and Advanced Challenges

Problem 4: Loop Control

7. Write a program that asks the user to guess a secret number between 1 and 100. Provide hints if the guessed number is too high or too low. Use a while loop until they guess correctly.

Problem 5: List Manipulation with Methods

9. Given a list of strings, create a new list containing only the strings longer than 5 characters using a for loop.

10. Write a program that takes a list of numbers and removes all duplicates, then prints the updated list.

Problem 6: Tuple Manipulation

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11. Create a tuple of coordinates representing points (x, y). Use a for loop to calculate the distance of each point from the origin (0, 0).

****Problem 7: Advanced Challenge****

12. Write a program that generates a list of 20 random numbers between 1 and 50. Using a for loop, print the largest and smallest numbers in the list.

****Problem Set 3: Putting It All Together****

****Problem 8: Loop Combinations****

13. Create a list of numbers. Using a nested for loop, calculate and print the product of each pair of numbers in the list.

****Problem 9: Complex Conditions****

14. Given a list of ages, use a for loop to print whether each age is "Child" (0-12), "Teen" (13-19), "Adult" (20-65), or "Senior" (66+).

****Problem 10: Puzzle Solver****

15. Write a program that generates a list of random numbers between 1 and 20. Using a for loop, find and print the first occurrence of the number 15. If it's not found, print a message indicating its absence.