**PM4SUCCESS DATA ANALYTICS PROJECTS**

**8th August 2024**

Mini Project 4: Basic List Operations

Task:

• Elements to Use: ["apple", "banana", "cherry", "date", "elderberry"]

• Perform the following operations with the above list:

1. Indexing: Access and print the second ("banana") and fourth ("date") elements.

2. Slicing: Create a sublist containing the second to fourth elements and print it.

3. Appending: Add a new element "fig" to the end of the list.

4. Modifying: Change the third element "cherry" to "coconut".

5. Removing: Remove the first element "apple" from the list.

• Finally, print the modified list.

Mini Project 5: List Value Swap

Task:

• Elements to Use: ListA = [10, 20, 30, 40, 50] ListB = [‘A’, ‘B’, ’C’, ‘D’, ‘E’]

• Swap the values of the first list to be that of the second list and the value of the second to be that of the first.

• Print the list before and after the swap.

Mini Project 6: Looping Through a List

Task:

• Elements to Use: ["red", "blue", "green", "yellow", "orange", "purple"]

• Use a for loop to iterate over the list and print each element.

• Use another for loop to print the elements along with their indices.

Mini Project 7: Counting Occurrences in a List

Task:

• Elements to Use: ["apple", "banana", "apple", "cherry", "apple", "date", "banana", "apple"]

• Use a loop to count the number of times "apple" appears in the list.

• Print the element and its count.

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Mini Project 8: List Comprehension

Task:

• Elements to Use: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

• Use list comprehension to create a new list containing the squares of each integer.

• Print the original list and the new list.

Mini Project 9: List Filtering Using Loops

Task:

• Elements to Use: [5, -3, 12, -8, 7, -1, 14, -6]

• Use a loop to create a new list that contains only the positive numbers from the original list.

• Print both the original list and the filtered list.

**11TH August 11, 2024**

Project 10: Temperature Converter

Objective: Create a program that converts temperatures between Celsius and Fahrenheit.

Tasks:

1. Input: Prompt the user to enter a temperature value and the unit (Celsius or Fahrenheit).

2. Conversion: Use conditional statements to convert the temperature to the other unit.

3. Output: Display the converted temperature.

Project 11: Simple ATM Simulator

Objective: Develop a basic ATM simulator that allows users to check their balance, deposit money, and withdraw money.

Tasks:

1. Initial Setup: Start with a predefined balance.

2. Menu: Display a menu with options to check balance, deposit money, withdraw money, or exit.

3. Operations: Use conditional statements to perform the selected operation.

4. Loop: Allow the user to perform multiple operations until they choose to exit.

Project 12: Multiplication Table Generator

Objective: Build a program that generates the multiplication table for a number provided by the user.

Tasks:

1. Input: Ask the user to enter a number.

2. Loop: Use a loop to generate and display the multiplication table for that number up to 12.

3. Output: Display the table in a clear format.

Project 13: Sentence Reverser

Objective: Create a program that reverses the words in a sentence provided by the user.

Tasks:

1. Input: Prompt the user to enter a sentence.

2. String Manipulation: Split the sentence into words, reverse the list of words, and join them back into a string.

3. Output: Display the reversed sentence.

Project 14: Simple Number Guessing Game

Objective: Create a basic number guessing game where the user has to guess a number within a certain range.

Tasks:

1. Generate a Number: Generate a random number between 1 and 50.

2. User Guess: Prompt the user to guess the number.

3. Comparison: Use conditional statements to check if the guessed number is too high, too low, or correct.

4. Loop: Allow the user multiple attempts to guess the number by using a loop.

5. Output: Provide feedback on each guess until the correct number is guessed.

Project 15: Text Analyzer

Objective: Build a program that analyzes a piece of text and provides basic statistics.

Tasks:

1. Input: Ask the user to enter a piece of text.

2. Word Count: Count the number of words in the text.

3. Character Count: Count the number of characters in the text.

4. Loop: Use a loop to count specific features like the number of vowels.

5. Output: Display the results to the user.