Hands-on Lab: Get a solution to the given coding problem

Estimated Time: 40 mins

Introduction:

In the dynamic world of coding, ChatGPTs serve as invaluable assistants for swiftly tackling coding problems. Knowing how to effectively utilize a ChatGPT can streamline your problem-solving process and provide timely, personalized guidance. This guide explores the best practices and strategies for using ChatGPTs to obtain solutions to coding challenges, making the coding experience more efficient and rewarding. Let's dive into the world of ChatGPT-assisted coding solutions and elevate your problem-solving capabilities.

Learning Objectives:

After completing this lab, you should be able to perform the following tasks:

- Understand how to use generative AI in a step-by-step approach to obtain solutions for coding problems.

- Craft questions for the ChatGPT to ensure accurate and anticipated outcomes for coding problems.

  Please note that generative AI is an evolving field. As you attempt the labs, your experience and output might be different than what is seen here.

In case you need familiarity with the Interface/classroom please see the [Hands-on-Lab: Get familiar with GenAI Classroom](#) for reference.

Step 1: Asking questions to ChatGPT

In the `Prompt Instructions` field, please enter the following prompt inorder to instruct ChatGPT to offer thorough and detailed step-by-step solutions for coding problems within the Python programming language.The goal is to receive in-depth explanations and guidance, facilitating a comprehensive understanding of the coding solutions provided by ChatGPT.

1. 1

1. Provide a comprehensive and detailed step-by-step solution to the coding problems in the Python programming language.

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Now, let us ask a few questions to ChatGPT to get solutions for coding problems.

Task 1:

Problem Statement:

Write a Python program to find the maximum and minimum elements in a list.

Explanation:

- The problem statement explicitly outlines the task of identifying the maximum and minimum elements, ensuring clarity in the question.

- Python is explicitly specified as the programming language to be used.

- The prompt emphasizes the importance of requesting a step-by-step solution.

- It is important to verify the accuracy of the output, ensuring alignment with the expected results.

▶ Click here to view the sample response generated

Task 2:

Problem Statement:

Verify whether the provided code can be optimized:

```
1.  1
2.  2
3.  3
4.  4
5.  5
6.  6
7.  7
```

```
1. def find_largest(arr):
2.     largest = arr[0]
3.
4.     for num in arr:
5.         if num > largest:
6.             largest = num
7.     return largest
```

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Explanation:

- Develop a Python function to find the largest element in an array.

- Python is explicitly chosen as the programming language.

▶ Click here to view the sample response generated

Task 3:

Problem Statement:

Create a Python function to eliminate duplicates from a list of ten country names, sorting the result alphabetically. Provide an example input list containing duplicates to showcase the function's effectiveness.

Explanation:

- Develop a Python function to eliminate duplicates and sort a list of 10 country names.

- Python is explicitly chosen as the programming language.

▶ Click here to view the sample response generated

Task 4:

Problem Statement:

Verify whether the provided code can be optimized:

```
1.  1
2.  2
3.  3
4.  4
5.  5
6.  6
7.  7
8.  8
9.  9
```

```
1. def remove_duplicates(nums):
2.     seen = set()
3.     unique_nums = []
4.
5.     for num in nums:
6.         if num not in seen:
7.             seen.add(num)
```

```
8.        unique_nums.append(num)
9.    return unique_nums
```

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Explanation:

- Developing a Python function for eliminating duplicates in a list can be enhanced by emphasizing the improvement of code efficiency.

- Evaluate the code for potential optimizations, alternative data structures, and avoiding redundant operations.

▶ Click here to view the sample response generated

Task 5:

Problem Statement:

Write a Python function using the 'append' function to identify and return a list of duplicate elements from a given list of integers. Include a sample input list with duplicates to illustrate the function's operation.

Explanation:

- Create a Python function using 'append' to find and return duplicate elements in an integer list.

▶ Click here to view the sample response generated

Summary

This hands-on lab provides a comprehensive guide on effectively utilizing ChatGPTs for obtaining solutions to coding challenges. The introduction emphasizes the importance of ChatGPTs as valuable coding assistants and the benefits of streamlining the problem-solving process. The hands-on experience with ChatGPT helps users enhance their problem-solving capabilities and efficiency in coding.

Congratulations! You have leveraged generative AI and obtained solutions for various coding problems.

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