

Sample Question to Practice

1. Write a Python program that provides the following options for number conversions:
 - Convert a decimal number to binary.
 - Convert a binary number to decimal.
 - Convert a decimal number to hexadecimal.
 - Convert a hexadecimal number to decimal.
 - Exit the program.
 - Your program should include four separate functions, each dedicated to one type of conversion:
 - **Function 1:** Converts a decimal number to binary.
 - **Function 2:** Converts a binary number to decimal.
 - **Function 3:** Converts a decimal number to hexadecimal.
 - **Function 4:** Converts a hexadecimal number to decimal.
 - The program should prompt the user to select an option. After a conversion is performed, the user should be able to either choose another option or exit the program by selecting option 5.
2. Write a Python program that provides the following options for the user:
 - **Add activities to the planner**
 - Implement a function called **AddActivities** to collect a list of activities scheduled by date and store them in a dictionary.
 - The user can enter any date within the range of 1st November 2024 to 31st December 2024.
 - Restrictions:
 - Day: Must be between 1 and 31.
 - Month: Only November and December are allowed.
 - Year: Must be 2024.
 - b. Dictionary Format:
 - Activities should be stored in a dictionary with the following format:

```
{  
  "1-Nov-2024": ["Register for Webinar", "Buy Groceries"],  
  "2-Nov-2024": ["Get a gift for Shane's Birthday"]  
}
```
 - **Display activities for a specific date**
 - Implement another function called **DisplayActivities** that prompts the user to enter a date and displays the list of activities for that date.
 - If the entered date is outside the range (1st November 2024 to 31st December 2024), display an error message asking the user to enter a date within the specified range.
 - If the date is within the range but has no planned activities, display a message stating "No activities planned on this date."
 - **Assumptions:**
 - The user will enter dates in the required format.

Other questions to practice:

Functions

1. Counter with Nested Function
2. Example Function that can exhibit polymorphism

String

3. Count the Number of matching characters in a pair of strings.
4. Least Frequent Character in String
5. Removing the i^{th} character of a string
6. Replacing a substring or a character of string
7. Check if your string has any of the three following characteristics.
 - a. one special character
 - b. length of 8
 - c. Upper case
 - d. Lower case
 - e. Number

List

8. Merging multiple list
9. Split the list based on datatype.

Dictionary

1. Iterate through values in the dictionary using the values () function.
2. Sort by keys and values of the dictionary
3. Sum /Average of values in every Key in a dictionary