1. Scenario: A user is required to enter a valid number in a form, but users sometimes input invalid data

Write logic to repeatedly prompt the user until they enter a valid integer.

- Get the user input.
- Use type () function to check the type of the input.
- Use if condition to check whether the type is valid integer.
- Each time condition fails, loop continues and ask user to enter a valid integer.

2. Scenario: A data analysis tool processes a list of numbers and needs to identify the most frequently occurring value.

Write logic to find the most frequently occurring number in a given list.

- Create a variable named count and initialize it as 0.
- Store the first item from the list in a variable and use for loop to compare it with rest of the items in the list.
- Use if condition to check whether same item repeats. If yes, count variable increments and store the count value in a count list.
- Likewise, check for all the items in the list.
- Use max () to pick the most frequently occurring value.

3. Scenario: A text-processing application needs to compare words and check if they are anagrams (contain the same letters in a different order).

Write logic to determine whether two given strings are anagrams

- Get two input words from the user and store it in two different variables.
- Use sorted () to arrange the words.
- Use if condition to check whether both the words are same.
- If yes, print it is anagrams.
- Else, print it is not anagram.

4. Scenario: A speech analysis program needs to count the number of vowels sounds in a given input.

Write logic to count the number of vowels in a given string.

- Create a list with all the vowel letters in uppercase and lowercase.
- Get the user input and store it in a variable.
- Create a variable named count and initialize it as 0.
- Use nested for loop and if condition to check vowels in the user input.
- If vowel is there, increase the count by 1.
- Print the count variable to know the total count of vowel sounds in a given input.

5. Scenario: A text-editing software includes a feature to reverse the order of words in a sentence for stylistic effects.

Write logic to reverse the order of words in a sentence while keeping the words themselves intact.

- Get the user input
- Use split () to split and then store it in a list.
- Reverse the list [::-1]
- Print the reverse list.

6. Scenario: A missing number is detected in a sequence of values stored in a database.

Write logic to find the missing number in a list containing n-1 numbers from 1 to n.

- Get the l values from the user.
- Use for loop to check the sequence.
- Pick the first item from the list and compare it with the next item.
- Likewise, the loop continues.
- If missing number is detected, it will be stored in a variable

7. Scenario: An ATM machine processes withdrawal requests and needs to ensure that users cannot withdraw more than their account balance.

Write logic to allow a withdrawal only if the balance is sufficient.

- Get the user input for withdrawal amount.
- Use if condition to check whether the withdrawal amount is lesser than or equal to the balance amount.
- If yes, the withdrawal request processed.
- Else, it should print “Balance insufficient”

8. Scenario: A system needs to verify whether a given dataset contains duplicate entries.

Write logic to check whether a given list contains duplicate values.

- Get the input list from the user.
- Create a new empty list.
- Use for loop to loop through the input list.
- Use If condition to check if the item is not available in the empty list.
- If yes, it adds that value to that empty list. If not, it skips and checks the next item in the list.
- So, the new list only contains numbers without duplicates.

9. Scenario: A digital calculator includes a feature to sum the digits of a number for verification purposes.

Write logic to calculate the sum of all digits in a given integer.

- Get the user input.
- Create a new variable named sum and initialize it as 0.
- Convert the input number into a string.
- Now, convert that str to int and add it to sum variable.
- Print the sum variable to get sum of digits of a number.

10.Scenario: A language-learning app wants to verify whether a given sentence is a pangram (contains every letter of the alphabet at least once).

Write logic to check if a given sentence is a pangram.

- Get the user input and store it in a variable.
- Create a list with all the alphabets in both uppercase and lowercase.
- Use nested for loop to loop through each alphabet in the list and then use if condition to check whether it has that particular letter in the sentence or not.
- If any letter is not available in a sentence, loop breaks.
- If not, it prints “pangram”