### **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.

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**Answer:**

* Set the format for the number.
* If the user enter data is not match with the format. Then show the popup message to the user “Invalid input data. Please check the format”.
* Create a while loop for this condition for repeat the prompt. until user enter a valid integer.

### **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.

**Answer:**

* Read the dataset.
* Check the mode in the list of numbers. It will show that most frequently occurring value in the dataset.

### **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.

**Answer:**

* Get the string form the user.
* Check the string has a repeated letter in it.
* If yes means show that word is anagrams otherwise show the word is not an anagram.

### **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.

**Answer:**

* Get the input.
* Assign vowels equal to (a, e, i, o, u, A, E, I, O, U)
* Check whether the word contains vowels letter in it.
* Create a variable if the vowels letter contain in the word means add one to the variable.
* Finally print the variable it shows the count of vowels in the string.

### **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.

**Answer:**

* Get the string using the reverse function reverse it.
* It will show the reverse order of the string.

### **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.

**Answer:**

* To find the missing number in a list containing n-1 numbers from 1 to n, you can use the sum formula for the first n natural numbers.
* Then subtract the sum of the given list from this total to find the missing number.
* The formula gives the complete sum from 1 to n.
* Subtracting the actual sum reveals the missing value.

### **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.

**Answer:**

* Get the withdraw amount as input from the customer.
* Verify the customer account balances.
* If the input value is less than the account balance amount means processed the transaction otherwise denied the process.

### **Scenario:** A system needs to verify whether a given dataset contains duplicate entries. Write logic to check whether a given list contains duplicate values.

**Answer:**

* Read the dataset.
* Check whether the dataset entry as the duplicate value.

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* If the value in list repeated the same number it is consider as a duplicate value.
* And remove the duplicate value to processed the program.

### **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.

**Answer:**

* To find the total of all digits in a number, begin with any whole number-say, 472. Start from the last digit and add it to a total that begins at zero.
* After adding, remove that digit so you can move to the next one. Keep repeating this process until there are no digits left.
* The final total you get is the sum of all the digits in the original number.

### **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.

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### **Answer:**

* Get the string form the user.
* Check the whether the word contains every letter of the alphabet at least once
* If yes means show that word is pangram otherwise show the word is not a pangram.

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