

- • **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.
  1. Get the list from user
  2. find the unique values
  3. Run a loop and keep a count of each unique value
  4. Find the value which has the highest count

- • • **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.

1. Get the two string as input from user
2. for first letter in first string, Run a loop with second string and check if the

letter in present

at any location

3. for second letter in  
first string, Run a loop with  
second string and check if the  
letter in present  
at any location

4. Similarly check for  
all letters

5. Outer loop for first  
string and inner loop for second  
string

- • **Scenario:** A speech analysis program needs to

count the number of vowel sounds in a given input.

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

1. Get input string from user

2. Create list

vowels=[a,e,i,o,u]

3. Create count variable and set it to 0

3. Check if vowels is in the input string

4. If yes update count variable by 1

- • • **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.

1. Get the Input sentence from user and store it as a list with each word as element.
2. use list.reverse()

- • **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.
  1. Run loop in range(1,n)
  2. Check for Nan
  - 3.starting from 1, check if  $(i+1)$  element is present
- • **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.

1. get the user's account no.
2. Get withdrawal amount
3. Set minimum \_balance as per bank instruction
3. If balance>

withdrawal amount  
+minimum\_balance, print-  
“ request processing”

4. Update  
balance . balance= balance-  
withdrawal amount

5. Else print  
“ insufficient funds”

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

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

1.convert the list to  
a set-(set has only unique  
values)

2. Then compare if  
`set== list`

3. If yes, there are  
no duplicates

4. If no, then list  
has duplicates

- **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.

1. Store the integer as a string
2. Set sum=0
3. Iterate through the string and add each iterating number to the sum

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