#### **Scenario:** A program needs to find the second largest number in a given list of numbers. Logic:

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#### Enter the Lists of numbers.

#### The numbers.sort(reverse=True)

* Enter the second largest number = numbers[1]
* Print(“Second largest number is:”, second largest)

#### **Scenario:** A function needs to convert an integer to its binary representation without using Python’s built-in bin() function. Logic:

* Divide the number by 2 repeatedly.
* Keep track of the remainders.
* The binary representation is the remainders read from bottom to top.

#### **Scenario:** A function needs to merge two sorted lists into a single sorted list efficiently. Logic:

* Start with two pointers.
* Compare the current numbers.
* Repeat step 2 until you reach the end of the queue
* Serve the remaining customers from the other queue.

#### **Scenario:** A function needs to find the first non-repeating character in a string for text processing. Logic:

* Enter the char.
* Traverse the string once and count the frequency of each char.
* Traverse the string again and find the 1st char with frequency.

#### **Scenario:** A program needs to identify common elements between two lists for data filtering. Logic:

* Enter the Two Lists.
* Order the List1 and List2 .Set as Lists
* Find the Common Elements in = Lists1,Lists2
* Print (Common Elements)

#### **Scenario:** A function is required to reverse a given number. Write logic to reverse a given number.

**Logic:**

* Enter the Lists of the numbers
* Number = reverse(Lists)
* Print(Number)

#### **Scenario:** A program needs to count the number of words in a given sentence. Write logic to count the number of words in a given sentence.

**Logic:**

* Enter the given Sentence
* Word = sentence.split() input the formula
* Return len(words)
* Print(“number of words:”,word)

#### **Scenario:** A function needs to compute the factorial of a number using iteration instead of recursion. Logic:

* Start the factorial function with name
* If n == 0,return 1
* Else, return n\*factorial(n-1)

#### **Scenario:** A program is required to convert all strings in a list to uppercase. Logic:

* Enter the string name.
* Name.string(uppercase) use this statement.
* Print (Name)

#### **Scenario:** A function is needed to compute the greatest common divisor (GCD) of two numbers using the Euclidean algorithm. Logic:

* Enter the GCD of two numbers
* The largest number the divides both numbers exactly
* Divide both amounts by GCD methods
* Print (“GCD of”,num1, num2)