1. **Scenario:** A system checks if a user is eligible to vote based on their age.

   Write logic to ask the user for their age and determine if they are eligible to vote based on whether they are 18 or older.
2. **Scenario:** A program processes a list of numbers and needs to find the largest value.

   Write logic to identify and return the largest number from a given list.
3. **Scenario:** A company provides employees with a 10% bonus if their salary exceeds $50,000.

   Write logic to determine the bonus amount based on the given salary.
4. **Scenario:** A program evaluates a number to determine if it is even or odd.

   Write logic to check whether a given number is even or odd.
5. **Scenario:** A text-processing tool reverses a given word or sentence for formatting purposes.

   Write logic to take a word or sentence as input and produce its reversed version.
6. **Scenario:** A grading system determines whether a student has passed or failed based on their score.

   Write logic to check if a student has passed a subject by scoring at least 40 marks.
7. **Scenario:** A retail store offers a 20% discount if a customer's total order exceeds $100. Write logic to calculate the final amount to be paid after applying the discount.
8. **Scenario:** A banking system processes withdrawal requests and ensures the user has enough balance.

   Write logic to check if a user has enough balance before allowing a withdrawal and update the remaining balance accordingly.

9. **Scenario:** A calendar system verifies whether a given year is a leap year based on standard leap year rules.
   Write logic to determine whether a given year is a leap year.
10. **Scenario:** A program filters out only even numbers from a given list.
    Write logic to extract and return only the even numbers from a list.

My Answers (krithiksha):

1. Scenario:

A system checks if a user is eligible to vote based on their age.
Write logic to ask the user for their age and determine if they are eligible to vote based on whether they are 18 or older.

i. Get the input of age from user
ii. Check the age is greater than 18
iii. If greater than 18 , eligible to vote
iv. Otherwise, not eligible

2. Scenario:

A program processes a list of numbers and needs to find the largest value.
Write logic to identify and return the largest number from a given list.

➔ Approach 1

i. Get the list of numbers
ii. Sort the list in descending order
iii. Get the largest number from the list (which is first element list[0])

➔ Approach 2

i. Get the list of numbers
ii. Use max() functon to Get the largest number from the list (max(list))

3. Scenario:

A company provides employees with a 10% bonus if their salary exceeds $50,000.
Write logic to determine the bonus amount based on the given salary.

i. get the salary of the employees
ii. Check if the salary is greater than $ 50,000
iii. If salary is greater than $ 50,000, calculate the
Bonus amount = salary *10%
Salary with bonus amount = salary + bonus amount
For the employee and return the salary with bonus amount
iv. Otherwise, print the employee is not eligible for the bonus

4. Scenario:

A program evaluates a number to determine if it is even or odd.
Write logic to check whether a given number is even or odd.

i. Get the number
ii. Check if the number divisible by 2
iii. If yes, even number
iv. Otherwise, odd number

5. Scenario:

A text-processing tool reverses a given word or sentence for formatting purposes.
Write logic to take a word or sentence as input and produce its reversed version.

i. Get the word
ii. Reverse the word using slicing operation [::-1]
iii. Print the reversed word

6. Scenario:

A grading system determines whether a student has passed or failed based on their score.
Write logic to check if a student has passed a subject by scoring at least 40 marks.

i. Get the student score
ii. Check if the student mark is greater than 40 marks
iii. If mark is greater than 40 marks , student is passed
iv. Otherwise, student is failed

7. Scenario:

A retail store offers a 20% discount if a customer's total order exceeds $100. Write logic to calculate the final amount to be paid after applying the discount.

i. Get the customer order price
ii. Check if the order price is greater than $100
iii. If price is greater than $100 , apply discount
Discount_price = order_price * 20%
Final_amount = order_price + Discount_price
Return the final amount to be paid by the customer
iv. Otherwise, print the customer is not eligible for the discount

8. Scenario:

A banking system processes withdrawal requests and ensures the user has enough balance. Write logic to check if a user has enough balance before allowing a withdrawal and update the remaining balance accordingly.

i. User request the withdrawal amount (2000)
ii. Check the withdrawal amount is greater than account balance (10000)
iii. If withdrawal amount is greater than account balance, print You don't have enough balance and also print the balance amount
iv. Otherwise, proceed to the withdrawal amount.
Account balance = account balance - withdrawal amount. (8000)
Send the withdrawal amount to user and update the current account balance

9. Scenario:

A calendar system verifies whether a given year is a leap year based on standard leap year rules.
Write logic to determine whether a given year is a leap year.

i. Get the year
ii. Check the year is leap year or not based on standard condition
Year should be divisible by 4 and not divisible by 100
Or
Year should be divisible by 400
iii. If the condition is passed, the given year is leap year
iv. Otherwise, it is not a leap year

10. Scenario:

A program filters out only even numbers from a given list.

write a logic to extract and return only the even numbers from a list

i. Get the list
ii. Create a new list
iii. Loop through the list (using for loop)
iv. Check each element of the list is even using (element%2==0) condition
v. If condition is true, store the result in new list
vi. Otherwise, skip the element