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.

   Answer:

   Step 1: Get Input from the user – "Enter your age".
   Step 2: Use 'If else' statement to decide whether the user is eligible to vote.

   - If age >= 18 - Print - "You are eligible to vote"
   - else – Print – "You are not eligible to vote".

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.

   Answer:

   Step 1: Initialize list. For Example : numbers = [90, 20, 80, 10]
   Step 2: Put Condition using if else - by comparing the list values one by one, and assign the greater value into a variable.

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.

   Answer:

   Step 1: check the salary by using if salary > 500000, perform calculation – bonus = salary * 0.10

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.

   Answer:

   Step 1: check condition using if number % 2 == 0, print - "The number is Even" , else - print " The Number is 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.

   Answer:

   Step 1: Get input string from the user.
   Step 2: Create a function for reverse string using slicing method and return the value. Then Print the reversed string.

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.

   Answer:

   Step 1: Check if mark >= 40 – Print – “Pass”. Else – Print – “Fail”.

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.

   Answer:

   Step 1: Check conditions using if else,

   - If OrderTotal > 100, calculate –> Discount = order total * 0.20, then FinalAmount_to_Pay = OrderTotal – Discount. Then Print “FinalAmount_to_Pay”.
   - Else -> FinalAmount_to_Pay = OrderTotal. Print “FinalAmount_to_Pay”.

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.

Answer:

Step 1: Check conditions using if else

- If AccountBalance > WithdrawalAmount –>
  - AccountBalance = AccountBalance - WithdrawalAmount
- Else
  - Print -> “Insufficient 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

Answer:

Step 1: create a function and check the condition Using IFELSE, that the given year is divisible by 4 and not divisible by 100. If this condition is true then the given year is Leap Year and else it is false.

Step 2: Assign year to a variable, use is if else statement by calling the function to print the year is leap or not.

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.

Answer :

Step 1: create a Initialize the even number list EvenNumbers[]., and check condition using if number % 2 == 0, if the condition is true, append it to a new EvenNumbers = [].

Step 2: Initialize the list of numbers,and print the even number by calling the function created.