

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.

Logic:

- a. Ask the user for their age.
 - b. Convert the input string to integer.
 - c. Determine if they are eligible to vote
 - i. Check if the given number is greater than or equal to the parameter value [18] – Eligible.
 - ii. Handle age below the parameter value – Not eligible.
 - iii. Handle age below zero – negative values are not allowed.
 - d. Except value error where the input is other than integer value.
 - e. Print the outcome.
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.

Logic:

- a. Select the list of numbers given.
 - b. Store the first value as the largest one. Then go to the second value and compare it with the stored value. If the selected value is greater than the stored value, replace the stored value with the selected value else go to the next value. At the end of the last value, now the largest one is the stored value. Use the loop statement.
 - c. Print the stored value as the largest one.
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.

Logic:

- a. Ask the user for their salary.
- b. Convert the input string to integer.
- c. Determine if they are eligible to get a bonus
 - i. Handle salary greater than the parameter value [\$50,000]
 1. Then calculate the bonus by multiplying the input value * 10% and store the value.
 - ii. Else, not eligible and no bonus. Store the value as zero.

d. Print the outcome – stored value.

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.

Logic:

- a. Ask the user to provide the input value.
- b. Determine the given number is divisible by two with the remainder zero.
- c. If the condition is satisfied, the result is Even else Odd.
- d. Print the result.

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.

Logic:

- a. Ask the user to provide the input value – word or sentence.
- b. Convert the given value to list which will break the words into letters and spaces.
- c. Use the reverse function for the list.
- d. Print the result.

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.

Logic:

- a. Ask the user to provide the input value – subject mark.
- b. Determine the given value is greater than or equal to 40.
- c. If the condition is satisfied, the result is Pass else Fail.
- d. Print the result.

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 for the discount.

Logic:

- a. Ask the user to provide the input value – Total order value.
- b. Determine the given value is greater than \$100.00.
- c. If the condition is satisfied, the final value is multiplication of the input value and 80% else Input value.
- d. Print the result.

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.

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Logic:

- a. Ask the user to provide the input value – amount to be withdrawn.
- b. Collect or calculate the balance value.
- c. Determine the given value is greater than or equal to the balance value.
- d. If the condition is satisfied, calculate the remaining balance by subtracting the input value from the balance value.
- e. Print the remaining balance.
- f. If the condition is not satisfied, print that no adequate balance is available.

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.

Logic:

- a. Ask the user to provide the input value – Year.

- b. Determine the given value is
 - i. Divisible by 4 and no remainder AND
 - ii. Divisible by 100 with a remainder value or divisible by 400 with no remainder.
- c. If the conditions are satisfied, Print the given year is Leap year else not 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.

Logic:

- a. Select the list values.
- b. Determine the given value is divisible by 2 with zero remainder.
- c. Use the filter function to select only the satisfied values.
- d. You can use the tuple with lambda function.
- e. Print the remaining balance.
- f. If the condition is not satisfied, print that no adequate balance is available.