

Scenario-Based Questions Solutions

1. **Scenario:** A system checks if a user is eligible to vote based on their age.
Logic:
 - a. Ask the user to enter their age.
 - b. Check if the age is 18 or older.
 - c. If yes, print "Eligible to vote."
 - d. Otherwise, print "Not eligible to vote."

2. **Scenario:** A program processes a list of numbers and needs to find the largest value.
Logic:
 - a. Read the list of numbers.
 - b. Assume the first number is the largest.
 - c. Iterate through the list, comparing each number with the current largest value.
 - d. If a larger number is found, update the largest value.
 - e. Return the largest number.

3. **Scenario:** A company provides employees with a 10% bonus if their salary exceeds \$50,000.
Logic:
 - a. Read the employee's salary.
 - b. If the salary is greater than \$50,000, calculate a 10% bonus.
 - c. Otherwise, set the bonus to zero.
 - d. Return the calculated bonus amount.

4. **Scenario:** A program evaluates a number to determine if it is even or odd.
Logic:
 - a. Read the input number.
 - b. Check if the number is divisible by 2.
 - c. If yes, print "Even."
 - d. Otherwise, print "Odd."

5. **Scenario:** A text-processing tool reverses a given word or sentence for formatting purposes.
Logic:
 - a. Read the input word or sentence.
 - b. Convert the input into a list of characters.
 - c. Reverse the order of characters.
 - d. Join the reversed characters into a string.
 - e. Return the reversed word or sentence.

6. **Scenario:** A grading system determines whether a student has passed or failed based on their score.
Logic:
 - a. Read the student's marks.
 - b. If the marks are 40 or above, print "Pass."
 - c. Otherwise, print "Fail."

7. **Scenario:** A retail store offers a 20% discount if a customer's total order exceeds \$100.
Logic:

- a. Read the total order amount.
 - b. If the amount is more than \$100, calculate a 20% discount.
 - c. Subtract the discount from the total amount.
 - d. Return the final amount to be paid.
8. **Scenario:** A banking system processes withdrawal requests and ensures the user has enough balance.
Logic:
 - a. Read the account balance and withdrawal amount.
 - b. If the withdrawal amount is less than or equal to the balance, process the withdrawal.
 - c. Subtract the withdrawal amount from the balance and return the updated balance.
 - d. If the withdrawal amount exceeds the balance, print "Insufficient funds."
9. **Scenario:** A calendar system verifies whether a given year is a leap year based on standard leap year rules.
Logic:
 - a. Read the input year.
 - b. If the year is divisible by 400, it is a leap year.
 - c. If the year is divisible by 100 but not by 400, it is not a leap year.
 - d. If the year is divisible by 4 but not by 100, it is a leap year.
 - e. Otherwise, it is not a leap year.
10. **Scenario:** A program filters out only even numbers from a given list.
Logic:
 - a. Read the list of numbers.
 - b. Create an empty list to store even numbers.
 - c. Iterate through the list and check if each number is divisible by 2.
 - d. If divisible, add the number to the new list.
 - e. Return the list of even numbers.