

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.

- Obtain the age from user using a prompt
- Check with 'if' condition for greater than 18 or equal to 18
- Condition satisfies: then print eligible to vote
- Else print 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.

- Assign the first element as the largest number in a variable max
- Traverse through the list using a for loop
- If the encountered value in the list is greater than max variable
- Then assign the number to the variable
- Else just skip to the next variable till the end of the list
- After traversing through the whole list, return the max 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.

- Obtain the salary number from the user
- In the if condition check if salary is greater than 50,000
- If yes, then calculate $(0.1 \times \text{the salary})$ and return
- If not, then return bonus as zero

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.

- Obtain the number from the user
- Use an if condition to calculate and check the value of modulo 2 of the number
- If the answer is 0, then it is divisible by 2, so return it is an even number
- If not, return as an 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.

- Accept the text as a string input from the user
- Declare an empty list
- Using a for loop or while loop, traverse through the array starting from the last character
- Append it to the reversed list
- Convert the list to a string using join() function and return it

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.

- Obtain the score from user using a prompt
- Check with 'if' condition for greater than 40 or equal to 40
- Condition satisfies: then print passed
- Else print 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.

- Obtain the total order amount from user using a prompt
- Check with 'if' condition for greater than 100
- Condition satisfies: then return [total amount - (0.2 x total amount)]
- Else return total amount as it is

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.

- Obtain the withdrawal request amount from the user
- Set the minimum balance variable
- Check with if condition if the (balance – withdrawal amt) >= minimum balance
- If the condition is satisfied: then allow the user to withdraw
- Else: alert the user of the 'minimum balance is low' message

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.

- Obtain the year
- Use an if condition to calculate and check the value of modulo 4 of the number
- If the answer is 0, then it is divisible by 4, so return it is a leap year
- If not, return as 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.

- Traverse through the list using a loop
- Declare a result list
- Use an if condition inside the loop to check the value of modulo 2 of the number
- If the answer is 0, then append that number to the result list
- If not, just skip (pass)
- After traversing through the list, return the result list