### **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:**

1. Get the user age using ‘Input’ function.
2. Using ‘if statement’, check whether the age is >17.
3. If yes, print ‘Eligible to vote’.
4. Else, print ‘Not eligible to vote’.

### **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:**

1. Define the list of numbers.
2. Assign the first element of the list to a variable.
3. Use ‘for’ loop to process the numbers one by one.
4. Use ‘if statement’ to check the condition: i >= first element.
5. Assign largest num = i & first element = i.
6. After the loop ends, print the largest number.

**Pseudo-code:**

listt = [11,12,15,13,14]

num = listt[0]

for i in listt:

if i>=num:

largest\_num = i

num = i

print(‘The largest number is ‘,largest\_num)

### **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:**

1. Get the salary from the user using input function.
2. Using ‘if function’ check, if salary > 50000.
3. If yes, assign bonus amount = 0.1\*salary.
4. Then print the bonus amount.

### **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:**

1. Get a number from the user using ‘input’ function.
2. Use ‘if statement’ to check the condition, num%2==0.
3. If yes, print ‘The given number is even’.
4. Else print ‘The number is odd’.

### **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:**

1. Get the word or sentence using ‘input’ function.
2. Reverse the word or sentence using ‘slicing’ method.
3. Print the reversed text.

### **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**:

1. Use ‘if statement’ to check whether the given mark is greater than or equal to 40.
2. If yes, print ‘Pass’.
3. Else print ‘Fail’.
4. **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.

**Logic**:

1. Use ‘if statement’ to check if the total amount exceeds 100$.
2. If yes, we can assign ‘amount\_to\_be\_paid=0.8\* total amount’.

### **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:**

1. Get the user input of how much amount to be withdrawn.
2. Use ‘if statement’ and check whether the withdraw\_amount <= balance\_amount.
3. If yes, withdrawal is allowed. Also print the Remaining\_balance = balance\_amount- withdraw\_amount.
4. Else print ‘Insufficient balance’ and the balance\_amount.

### **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:**

1. Use ‘if statement’ to check whether the given year is divisible by 4 and not divisible by 100.
2. If yes, print ‘It is a leap year’.
3. If not, print ‘It is not a leap year’.

### **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:**

1. Define the list of numbers and an empty list of even\_numbers.
2. Use ‘for’ loop to run all the numbers in the list one by one.
3. Use ‘if statement’ to check the condition, num%2==0.
4. If yes, append the number to the empty list of even\_numbers.
5. Print the list of even\_numbers.

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