Set 1 - Python - Scenario Based - Logic

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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:
   1. Get age from user
   2. Check the age, if age is greater than 18 or equal then print ‘eligible’ else ‘not eligible’

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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:
   1. Create a variable for max value like ‘maxNum’
   2. Create for loop with condition of num > maxNum
   3. If condition True then update maxNum with num value
   4. The for loop runs length of the list times and we get Largest number in the list
   5. Print the maxNum value as we want

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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:
   1. Get salary value from the user
   2. Check the salary amount exceeds 50000 or not
   3. If True, (10/100)*(user salary amount)
   4. Print the calculated value

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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:
   1. Get number from the user
   2. Check the number if it divided by two and remainder is 0
   3. If True, Print the number is Even
   4. Else, Print the number is odd

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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:
   1. Get word or sentence from the user
   2. If it word, length of the chars then using index and range we can reverse it
   3. If it sentence, find length of words using space between two words
   3.2 add those words into list using index then reverse the sentence

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6. **Scenario**: A grading system determines whether a student has passed or failed based on their mark.
Write logic to check if a student has passed a subject by scoring at least 40 marks.

Answer:
1. Get marks from the user
2. Check the each subject mark >= 40
3. If all True, then print the student is passed
4. If at least one subject is < 40 then print the student is failed

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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:
1. Get order value from the user
2. Check the order amount exceeds 100 or not
3. If True, (20/100)*(order amount) then reduce the discount from original user order amount
4. Print the final order value (Original Value - discount = final bill value)

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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:
1. Get withdrawal value from the user
2. Check the balance amount > withdrawal amount (here assume no minimum balance)
3. If True, allow the withdrawal process and show the remaining balance after that withdrawal
4. Else, block the process and let to know the balance amount in their account

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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:
1. Get year from the user
2. Check (year%400 == 0) and (year%100 != 0) if True then print Leap year
3. Else, print Not a Leap year

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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:
1. Get list from the user
2. Add for loop and check (num%2 == 0) this condition with every number in the list
3. If True, add that number in to new list
4. After the for loop ends, print the new List.
