1: Scenario: A system checks if a user is eligible to vote based on their

age.

Answer:

1. a.a.Get the user’s age
2. Define what is the legal age in your country
3. Compare the user’s age with legal age.
4. If the age of the user is equal or more than legal age, the age can vote
5. Other they can’t vote it.

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. Define the list of numbers with choice of yours
2. Iterate the list and pick up the items one by one
3. Store the 1st number as biggest number in the list
4. Compare the biggest number with the current iteration number
5. If the current iteration number is bigger than the biggest number then store the biggest number with the current iteration value
6. Otherwise move further
7. Repeat the process until the end of elements in the list
8. Whichever number is stored in the biggest variable is largest value in the list provided.

3. Scenario: A company provides employees with a 10% bonus if their

salary exceeds $50,000.

Answer:

1. Define the list of employees with name, employee id, salary
2. Iterate the list of employees
3. Check if their current salary is >$50000 or not
   1. If their salary is more than that, then calculate the revised salary = salary \* 0.10
   2. If their salary is not more than list, set the revised salary = salary
4. Repeat the process for all the employees until you reach the list employees in the list

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 the input from the user which they want to identity it’s an even or not
2. Check if the given number is divide by 2 with the reminder of 0
   1. If the reminder is 0 then the given number is even number
   2. Else the given number is 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.

Answer:

1. a.Take the input string from the user which you want to reverse
2. Calculate the length of the string
3. Iterate the characters one by one from last character to first character
4. Build a new string where store the characters one by one
5. Repeat the same for all the characters until you reach 0th characters

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.

Answer:

1. Get the inputs marks from the user
2. Set the passing score as 40
3. Compare the actual score vs the passing score
   1. If the actual score is equal to greater than passing score then print “Pass”
   2. Otherwise, please print to “Fail”

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 the total purchase order from user
2. Check if the total bill amount is exceeded than $100
   1. If it’s exceeded or equal, then calculate the discount price = total paid \* 0.20 and set the amount to pay variable = total bill amount - discount price
   2. If the value is lesser than 100, then set the amount to pay variable = total bill amount

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 the amount to withdraw from the user
2. Define the current balance
3. If with draw amount is greater than 0 else return the current balance and print current balance
   1. Validate if the current balance > = withdraw amount
      1. If the current balance is greater than withdraw amount then Set Current balance = current balance - withdraw amount
      2. If the current balance is lesser than withdraw amount then set the current balance = current balance and notify the user that fund is not available . so we can’t process the amount.

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:

Input = Year (input from the user) and output is boolean which is a leap or not.

1. Get the year from the user
2. If the number is greater than 0
   1. If the year is divisible by 4/100/400 and return given year is a leap year.
   2. Otherwise return or print the message to the user is not a leap year
3. Other wise , print or return the user that given year is 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.

Answer:

Input - a list of numbers with odd or even

Output - a list of number with even number list

1. Get the list of number from user
2. Iterate the list from 0 to last elements
   1. If the current iteration elements is divisible by 2 then add the number is evenList
   2. Otherwise skip the iteration process and move to the next elements
3. Repeat the process until you reach the last elements
4. Print or return the even List to the user