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.

SOLUTION:

1. GET AGE FROM USER . AGE=int(“input(“Enter Age “))
2. If(Age>=18):
3. Print(“Eligible to vote”)
4. Else:
5. 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.

SOLUTION:

Step 1: declare a list, num_list=[12,23,34,45,56]
Step 2: greater_number=max(num_list)
Step 3: print(greater)

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.

SOLUTION:

Step1 : emp_salary=int(input(“Enter Salary”))
Step 2: if(emp_salary >=50000):
Step 3: print(“you are eligible to bonus os 10% “)
Step 4: else:
Step 5: print(“Bonus not applicable to u”)

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.

SOLUTION:

Step 1: num=int(input(“enter any number”))
Step 2: if(num%2==0):
Step3 : print(“Even number”)
Step4 : else:
Step5: print(“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.

SOLUTION:

STEP 1: word=”ARTIFICIAL INTELLEGENCE”
STEP 2: print(reverse(word))

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.

SOLUTION:

1. Subject1=int(input(“subject 1 marks:”)
2. Subject2=int(input(“subject 2 marks:”)
3. Subject3=int(input(“subject 3 marks:”)
4. Subject4=int(input(“subject 4 marks:”)
5. Subject5=int(input(“subject 5 marks:”)
6. If(subject1>=40 and subject>=40 and subject3 >=40 and subject4>=40 and subject5 >=40):
7. Print(“pass”)
8. Else:
9. Print(“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.

Solution:

:

1. Total_order=int(input(“Enter total:”))
2. If(total_order>=100):

3. Print(“you have 20% offers, so your total amount :”,total_order*20%)

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.

SOLUTION:

```
1. withdrawal=int(input(“enter amount”))
2. Balance=10000
3. If(withdrawal>balance):
4. Print(“less balance, your transaction not allowed”)
5. Else:
6. Print(“your transaction sussefully, your current blance is :”,balance-withdrawal”)
```

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.

Solution:

```
1. Year=int(input(“enter year:”))
2. if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
3. print(“leap year”)
4. else:
5. print(“normal 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.

solution:

```
1. =[23,44,56,67,77,79]
2. For num in list:
3. If(num%==0):
4. Print(num,“is even number”)
5. Else:
6. Print(“odd number:”)
```