### **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.

**Logics:**

#get the age input as integer from user

#check age with condition using if age greater or equals to 18.

#if condition true,print as user is Eligible to Vote,else 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.

**Logics:**

#Initialize list of integer items like list1=[1,2,3,4,5]

#Initialize variable name ‘max’=list of 0th index

#create for loop in a way list1 is iterated

#check with if condition whether each value is greater than ‘max’ variable.

#if condition is false loop checks next items in list ,if condition is true assign ‘max’ value is current iterated value.

#print as maximum number in list (max) in which maximum value got stored

### **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.

**Logics:**

#get the input of salary in integer and store in a ‘salary’ variable

#assign ‘bonus’ variable which store calculation of 10% of their salary like 0.1\*salary

#Initialize if condition which checks ‘salary’ is >50000

#If condition true print ‘you get bonus with amount of bonus ‘bonus’ variable

#put else and declare print satatement with no bonus

### **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.

**Logics:**

# get the input in integer and store in a ‘num’ variable

#check with if condition if num %2 is equals to 0.is true print even number and put else statement as odd number

### **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.

**Logics:**

#get input as string and store in ‘word’ variable

#Use index slicing method in string to print string in reverse.like word[: :-1] which start to print from -1th index to 0th index

### **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.

**Logics:**

# get input as integer and store in ‘mark’ variable

#put if condition that if mark > or equals to 40 .if condition is true create print statement as ‘You are Passed’ and put ‘You are Fail’ in else condition

**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.

**Logics:**

#get each price of ordered products from user with comma inbetween each price and store in ‘eachprice’variable

#use ‘split’ method to split string by ‘,’.this will split each price and store in list and store that in a variable name as ‘price\_strlist’

#since it is still a string list we have to convert it to integer list using built in function called ‘map(int,price\_strlist)’ which converts string list to integer list. And store in variable called ‘price\_intlist’

#assign a variable name’total’ = 0

#Use for loop to iterate price\_intlist and add every iterated price using total=total +price

#put if condition as if total is greater than 100 then

Add discount=0.2\*total. print they get 20%discount with discount price and put ‘total’ variable in else that they have to pay since they don’t have discount.

**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.

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**Logics:**

#get integer input that have to withdraw from user and store in ‘withdraw’ variable

#Assume bankbalance is 1 lakh and he withdraw 5000.assign bank\_balance variable with 1 lakh

#put rem\_balance variable is bank\_balance-withdraw

#check his balance is >withdraw using if condition ‘

#if condition is true print your transaction is being processed and display message as remaining balance is ‘rem\_balance’

#put you have Insufficient balance message in else

### **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.

**Logics:**

#get inter input of year in ‘year’variable

#put 3 layer if condition of each condition is year%4==0,year%100==0,year %400==0 then put message as its leap year.and not a leap year in all else block

### **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.

**Logics:**

#get list of numbers from user in between comma to each number

#split this by ‘,’ and store in another variable

#convert this string list into integer list using map() built in method and store in another variable

#use comprehension for loop in which we can create new even number list by put logic num%2==0.use another for loop to iterate and return all numbers

#put everything inside a function to call

### 

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