BRG GROUP
SARGAM HOUSE

URMI SCHOOL

CERTIFICATE

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BRG GROUP
SARGAM HOUSE

URMI
SCHOOL

ACADEMIC YEAR : 2021-22

ROLL NO : 32

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CLASS : XII – A

SUBJECT : COMPUTER SCIENCE

SUBJECT CODE : 083

PROJECT GUIDE : AIYSHA SIDDIQUI

P.G.T. (C.S.)

URMI SCHOOL AND HOSTEL

VADODARA

Q: 1 Program to find LCM

```
def lcm(x, y):
    if x > y:
        g = x
    else:
        g = y
    while True:
        if (g % x == 0) and (g % y == 0):
            l = g
            break
        g += 1
    return l


n1 = int(input("What's then first number : "))
n2 = int(input("What's then second number : "))
print(f"The lcm of {n1} and {n2} is : ", lcm(n1, n2))
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
==== RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\Calculate LCM.py ====
What's then first number : 10
What's then second number : 3
The lcm of 10 and 3 is :  30
>>>
```

Q : 2 Program to find HCF

```
def hcf(x, y):
    if x > y:
        s = y
    else:
        s = x
    i_list = []
    for i in range(1, s + 1):
        if (x % i == 0) and (y % i == 0):
            i_list.append(i)
    return i_list.pop(len(i_list) - 1)


n1 = int(input("What's then first number : "))
n2= int(input("What's then second number : "))
print(f"The HCF of {n1} and {n2} is : ", hcf(n1, n2))
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\Hcf Finding.py =====
What's then first number : 23
What's then second number : 69
The HCF of 23 and 69 is :  23
```

Q:3 Calculator Program

```
import math
def add(x, y):
    return x + y
def subtract(x, y):
    return x - y
def multiply(x, y):
    return x * y
def divide(x, y):
    return x / y
def sqrt(x):
    return math.sqrt(x)


print("""SELECT OPERATION:-
-->TYPE-1 FOR ADDITION
-->TYPE-2 FOR SUBTRACTION
-->TYPE-3 FOR MULITIPLICATION
-->TYPE-4 FOR DIVISION
-->TYPE-5 FOR SQUARE ROOT
-->TYPE-6 FOR STOPPING LOOP""")

while True:
    choice = input("ENTER YOUR CHOICE[1,2,3,4,5,6]=")
    if choice in ('1', '2', '3', '4', "5"):
        print(end="\n")
        if choice == '1':
            n1 = float(input("FIRST NUMBER="))
            n2 = float(input("SECOND NUMBER="))
            print(end="\n")
            print(n1, "+", n2, "=", add(n1, n2))

        elif choice == '2':
            n1 = float(input("FIRST NUMBER="))
            n2 = float(input("SECOND NUMBER="))
            print(end="\n")
            print(n1, "-", n2, "=", subtract(n1, n2))

        elif choice == '3':
            n1 = float(input("FIRST NUMBER="))
            n2 = float(input("SECOND NUMBER="))
            print(end="\n")
            print(n1, "*", n2, "=", multiply(n1, n2))

        elif choice == '4':
            n1 = float(input("FIRST NUMBER="))
            n2 = float(input("SECOND NUMBER="))
            print(end="\n")
            print(n1, "/", n2, "=", divide(n1, n2))

        elif choice == '5':
            n1 = float(
                input("Enter the number of which you need square
root . "))
            print(end="\n")
            print(n1, "=", sqrt(n1))

    elif choice == '6':
        print("LOOP IS BEEN ENDED")
        break
    else:
        print("ERROR IN INPUT:RERUN!")
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\REPLACING CALCULATOR.py
SELECT OPERATION:-
-->TYPE-1 FOR ADDITION
-->TYPE-2 FOR SUBTRACTION
-->TYPE-3 FOR MULITIPLICATION
-->TYPE-4 FOR DIVISION
-->TYPE-5 FOR SQUARE ROOT
-->TYPE-6 FOR STOPPING LOOP
ENTER YOUR CHOICE[1,2,3,4,5,6]=5

Enter the number of which you need square root . 10

10.0 = 3.1622776601683795
ENTER YOUR CHOICE[1,2,3,4,5,6]=
```

Q : 4 Program to get The Roman Number Value

```
tallies = {
    'I': 1,
    'V': 5,
    'X': 10,
    'L': 50,
    'C': 100,
    'D': 500,
    'M': 1000,
    'v':5000,
    'x':10000,
    'i':50000,
    'c':100000,
    "d":500000,
    "m":1000000

    # specify more numerals if you wish
}
key=tallies.keys()

for i in key:
    print(i,tallies[i],end="\n")

def RomanNumeralToDecimal(romanNumeral):
    sum = 0
    for i in range(len(romanNumeral) - 1):
        left = romanNumeral[i]
        right = romanNumeral[i + 1]
        if tallies[left] < tallies[right]:
            sum -= tallies[left]
        else:
            sum += tallies[left]
    sum += tallies[romanNumeral[-1]]
    print(sum)
    return sum
RomanNumeralToDecimal(input("\nEnter the Roman number to get it's
value like 'XVI' : ").upper())
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\roman.py ========
I 1
V 5
X 10
L 50
C 100
D 500
M 1000
v 5000
x 10000
i 50000
c 100000
d 500000
m 1000000

Enter the Roman number to get it's value like 'XVI' : MVX
1005
```

\

Q :5 Character Frequency Checker

```
def frequency_checker(String_input):
    frequencies = {}
    for char in String_input:
        if char in frequencies:
            frequencies[char] += 1
        else:
            frequencies[char] = 1
    print("-" *len("Character | Frequency"))
    print("Character | Frequency")
    print("-" * len("Character | Frequency"))
    for characters in frequencies:
        print(characters,"\t\t",frequencies[characters])


input_string = input("Enter any string : ")
frequency_checker(input_string)
```

Output :

```
Enter any string : Hi I am python
--------------------
Character | Frequency
--------------------
H               1
i               1
                3
I               1
a               1
m               1
p               1
y               1
t               1
h               1
o               1
n               1
```

Q : 6 Creating Acronyms From Phrase

```
import time

def call_the_name(y):

    a = "\t\t"
    for i in y:
        a += i + " "
    print("=" * (len(a) + 32))
    print(str(a).upper())
    print("=" * (len(a) + 32))
    print()


def acronym_finder(x):
    acronym = ''
    for i in x.split(' '):
        if i.lower() not in ['is', 'of', 'and', 'or', 'am',
'the']:
            if len(x.split(' ')) == 1:
                acronym += i[0].upper() + i[1].lower()

            elif len(x.split(' ')) > 1:
                acronym += i[0].upper()

            elif len(x.split(' ')) <= 0:
                print("Please give some input...")
    call_the_name("GET ACRONYMS FROM PHRASE")
    print(f"Acronym for ' {x} ' is {acronym}")


user_input = input("Enter a phrase : ")
acronym_finder(user_input)
time.sleep(7)
print("=" * len("Press any key to continue .."))
input("Press any key to exit ..")
```

Output :

```
= RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\Creating Acronyms\Acronyms.py
Enter a phrase : United States Of America
================================================================================
              G E T   A C R O N Y M S   F R O M   P H R A S E
================================================================================

Acronym for ' United States Of America ' is USA
============================
Press any key to exit ..
```

Q : 7 Finding factorial of a number

```
def factorial(n):
    f = 1
    a = 1
    while a <= n:
        f *= a
        a += 1

    print("The Factorial Of", n, "is : ", f)


x = int(input("Factorial Of Which Number : "))

factorial(x)
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

====== RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\Factorial .py =====
Factorial Of Which Number : 10
The Factorial Of 10 is :  3628800
```

Q : 8 Get the nth Fibonacci Number

```
from time import sleep


def fibonacci(n):
    fib_nums = [0, 1]
    i = 1
    if n == 1 or n == 2:
        print(n, 'th Prime Number is :', fib_nums[n - 1])
        print('Fibonacci Series :', fib_nums)
    elif n > 2:
        while True:
            fib = fib_nums[i - 1] + fib_nums[i]
            fib_nums.append(fib)
            if len(fib_nums) == n:
                break
            else:
                i += 1
        print(n, 'th Fibonacci Number is :', fib_nums[n - 1])
        input("Press any key to continue..")
        print("\n\n\n\n" * 10)
        ask_input = input(f"Would yoy like to see series  for {n}
th number ? [y or n] : ").lower()
        if ask_input.startswith("y"):
            print("\n\n\n\n" * 10)
            print('Fibonacci Series is :', fib_nums)
            input("Press any key to continue..")
    else:
        print('Please Enter A Valid Number')
        sleep(3)


print("\t\t  Get Nth Fibonacci Number ")
numb = int(input('Enter the nth number : '))
fibonacci(numb)
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

== RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\Fibonacci Series .py ==
                Get Nth Fibonacci Number
Enter the nth number : 10
10 th Fibonacci Number is : 34
Press any key to continue..
```

Q : 9 Dice Roller Helper

```
import random
import time
print("Welcome to Dice Roller Helper In this program number of
Dices will be rolled for your game!")
number_dices=int(input("Enter the number of dices you have to
roll? "))
number_of_players=int(input("Enter the number of players"))
rool_nos=1,2,3,4,5,6
ans="yes"
while ans=="yes" or ans=="y":
    for i in range(1,number_of_players+1):
        print("The player",i,"rolled :")
        rolled=0
        for j in range(number_dices):
            z=random.choice(rool_nos)
            rolled+=z
            print(z)
        time.sleep(2)
        print("Congo!you rolled",rolled)
    ans=input("Would you like to roll again? y/n")
```

Output :

```
========== RESTART: C:\Users\JaySs\Desktop\Cs pr
Welcome to Dice Roller Helper In this program number of Dices will be rolled for your game!
Enter the number of dices you have to roll? 2
Enter the number of players3
The player 1 rolled :
5
2
Congo!you rolled 7
The player 2 rolled :
3
5
Congo!you rolled 8
The player 3 rolled :
5
6
Congo!you rolled 11
Would you like to roll again? y/nn
```

Q : 10 Program To calculate simple interest and compound interest according to the user .

```
def ssd(x, y, z):
    if x < 0 or y < 0 or z < 0:
        print("Please rerun the code as the value can not be
negative!")
    else:
        ans_value = (x * y * z) / 100
        print("The Simple interest calculated is", ans_value,
".")
        print("For values Principle amount=", x, "Rate of
interest=", y, "Time period=",
              z)


def csd(x, y, z):
    if x < 0 or y < 0 or z < 0:
        print("Please rerun the code as the value can not be
negative!")
    else:
        ans_value = x * (((y + 1) / y) ** z)

        print("The Compound interest calculated is", ans_value,
".")
        print("For values Principle amount=", x, "Rate of
interest=", y, "Time period=",
              z)


count = "yes"
while count == "yes":
    ask1 = input("What u want me to calculate ? 1=S.I./ 2=C.I  :
")
    if ask1 == "1":
        a = int(input("Enter the value of principal amount : "))
        b = int(input("Enter the value of rate of interest : "))
        c = int(input("Enter the value of time period : "))
        ssd(a, b, c)

    elif ask1 == "2":
        p = int(input("Enter the value of principal amount : "))
        q = int(input("Enter the value of rate of interest : "))
        r = int(input("Enter the value of time period : "))
        csd(p, q, r)
    else:
        print("Have a nice day!")
        break
    count = input("You wold like to continue? ")
    continue
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

= RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\Calculating Simple And Compound Interest.py
What u want me to calculate ? 1=S.I./ 2=C.I  : 1
Enter the value of principal amount : 100
Enter the value of rate of interest : 10
Enter the value of time period : 1
The Simple interest calculated is 10.0 .
For values Principle amount= 100 Rate of interest= 10 Time period= 1
You wold like to continue?
```

Q : 11 Magic 8 Ball Game :

```
import random
import time

responses = ["Not so sure", "Most likely", "Absolutely not",
"Outlook is good", "I see good things happening",
             "Never", "Negative", "Could be", "Unclear, ask
again", "Yes", "No", "Possible, but not probable",
             "It is certain.", "It is decidedly so.", "Without a
doubt.", "Yes â€“ definitely.", "You may rely on it.",
             "As I see it, yes.", "Most likely.", " Outlook
good.", " Yes.", " Signs point to yes",
             "Reply hazy, try again.", "Ask again later.",
"Better not tell you now", "Cannot predict now.",
             "Concentrate and ask again", "Don't count on it", "
My reply is no.", " My sources say no.",
             " Outlook not so good.", " Very doubtful."]


def answerQuery():
    question = input("WHAT YOU WANT TO ASK ? ")
    print("LET ME DIG INTO YOUR HOROSCOPE AND FIND A PERFECT
ANSWER OF YOUR QUESTION.....")
    time.sleep(2)
    print("Hmm.....IT'S COMING...")
    time.sleep(2)
    print(random.choice(responses))
    print("\n")


answerQuery()
secondQuestion = (input("YOU FIND THE ANSWER WISE ? Y |
N :-")).casefold()
while secondQuestion == "y":
    answerQuery()
    secondQuestion = (input("YOU FIND THE ANSWER WISE ? Y |
N :-")).casefold()
else:
    print(input("PRESS ANY KEY TO EXIT..."))
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

== RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\MAGIC  8 BALL GAME.py =
WHAT YOU WANT TO ASK ? How's my day?
LET ME DIG INTO YOUR HOROSCOPE AND FIND A PERFECT ANSWER OF YOUR QUESTION.....
Hmm.....IT'S COMING...
Most likely.


YOU FIND THE ANSWER WISE ? Y | N :-
```

Q : 12 Program to calculate parallel and series resistance

```
n = int(input("""WHAT TYPE OF RESSISTANCE
YOU WOULD LIKE TO CALCULATE?
-->TYPE 1 FOR CALCULATING RESISTANCE IN PARALLEL
-->TYPE 2 FOR CALCULATING RESISTANCE I SERIES:"""))
s = c = f = 0
if n == 1:
    x = int(input("ENTER THE NUMBER OF VALUES:-"))
    for i in range(0, x):
        r = int(input("ENTER THE VALUE OF RESISTANCE(R):-"))
        c += 1 / r
        f = 1 / c
    print("THE PARALLEL RESISTANCE IS:-", f)
elif n == 2:
    x = int(input("ENTER THE NUMBER OF VALUES:-"))
    for i in range(0, x):
        r = int(input("ENTER THE VALUE OF RESISTANCE(R):-"))
        c += r
    print("THE SERIES RESISTANCE IS:-", c)
else:
    print("""THERE IS SOME ERROR IN TYPING:
             KINDLY CHECK WHAT YOU HAVE TYPED
             THANKS!!""")
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

= RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\PROGRAM TO CALCULATE THE
 PARALLEL AND SERIES RESSISTANCE .py
WHAT TYPE OF RESSISTANCE
YOU WOULD LIKE TO CALCULATE?
-->TYPE 1 FOR CALCULATING RESISTANCE IN PARALLEL
-->TYPE 2 FOR CALCULATING RESISTANCE I SERIES:1
ENTER THE NUMBER OF VALUES:-2
ENTER THE VALUE OF RESISTANCE(R):-10
ENTER THE VALUE OF RESISTANCE(R):-4
THE PARALLEL RESISTANCE IS:- 2.857142857142857
```

Q : 13 Vending Machine

```
b = input("ARE  YOU A SUPPLIER?")
if b == "YES" or b == "yes":

    print("GOOD MORNING SUPPLIER .")
    num = int(input("HOW MANY CANDIES ARE AVAILABLE FOR TODAYS'S
SALE?"))
else:

    print("SORRY,AS SUPPLIER HAS NOT YET FILLED CANDIES IN
VENDING MACHINE!")
    print("HAVE A LOVELY AND HAPPY DAY .")
    num = 0
while True:
    if num <= 0:
        print("WE ARE NOW OUT OF STOCK,YOU CAN COME TOMORROW.")

        break
    else:
        pass

        print("THE COST OF ONE CANDY IS:2$")
        USER = int(input('HOW MANY CANDY/CANDIES  YOU WOULD LIKE
TO BUY?'))
    if USER <= num:
        print("THE BILL AMOUNT FOR", USER, "CANDIES IS=", USER *
2,"$")
        print("HAVE A NICE DAY .")

        num -= USER
    elif USER > num:

        print("SORRY FOR INCONVINENCE!")
        print("AS WE ARE NOT HAVING", USER, "CANDIES/CANDY,BUT WE
HAVE", num, "NUMBER OF CANDIES/CANDY LEFT")
        print("WOULD YOU LIKE TO BUY", num, "CANDIES/CANDY?")
        ASK = input("TYPE YES OR NO:")
        if ASK == "YES" or ASK == "yes":
            print("THE BILL AMOUNT FOR", num, "CANDIES IS=", num
* 2,"$")
            print("HAVE A NICE DAY .")

            num = 0
        else:
            print("THANK YOU FOR VISITING. ")
            print("HAVE A LOVELY AND HAPPY DAY .")

            pass
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

=== RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\VENDING MACHINE.py ===
ARE  YOU A SUPPLIER?yes
GOOD MORNING SUPPLIER .
HOW MANY CANDIES ARE AVAILABLE FOR TODAYS'S SALE?10
THE COST OF ONE CANDY IS:2$
HOW MANY CANDY/CANDIES  YOU WOULD LIKE TO BUY?11
SORRY FOR INCONVINENCE!
AS WE ARE NOT HAVING 11 CANDIES/CANDY,BUT WE HAVE 10 NUMBER OF CANDIES/CANDY LEFT
WOULD YOU LIKE TO BUY 10 CANDIES/CANDY?
TYPE YES OR NO:yes
THE BILL AMOUNT FOR 10 CANDIES IS= 20 $
HAVE A NICE DAY .
WE ARE NOW OUT OF STOCK,YOU CAN COME TOMORROW.
```

Q : 14 Bmi Calculator

```
import time

from tabulate import tabulate

def call_the_name(y):
    add = "\t\t"
    for i in y:
        add += i + " "
    print("=" * (len(add) + 32))
    print(str(add).upper())
    print("=" * (len(add) + 32))
    print()


def bmi_calc(Weight, Height):
    Height_Squared = Height * Height
    BMI_Formula_Assisted = Weight / Height_Squared
    BMI_Formula_Completed = round(BMI_Formula_Assisted * 10000, 2)
    return BMI_Formula_Completed

def bmi_summary(bmi):
    summary = ''
    if bmi <= 18.5:
        summary += 'You are underweight contact doctor before you start feel
weakness.'

    elif 18.5 < bmi < 25:
        summary += 'Good! You are normal keep it.'

    elif 25 < bmi < 30:
        summary += 'Alert! You are overweight contact dietitian for your diet plan. '

    elif bmi > 30:
        summary += 'Alert! You need to work hard you are obese contact dietitian for
your diet plan and exercise. '
    print(summary)
    return summary

def ask_metric_conversion(ask):
    if ask.startswith("y"):

        call_the_name("CONVERSION FROM IMPERIAL VALUE")
        Imperial_Weight = float(input("What is your weight in pounds : "))
        Imperial_Height = float(input("What is your height in feet (decimals) : "))

        Metric_Converted_Weight = str(Imperial_Weight * 2.205)
        Metric_Converted_Height = str(Imperial_Height * 30.48)
```

```
        print("Your metric weight is " + Metric_Converted_Weight + " kg, please note
this for the next stage.")
        print("Your metric height is " + Metric_Converted_Height + " cm, please note
this for the next stage.")
        input("Please note it down and then press any key...")

        ask_metric_conversion("n")
    else:
        global name

        call_the_name("BMI CALCULATOR")
        Age = input("Put in your age: ")
        Name = input("Put in your name: ")
        Weight = int(input("Put in your weight in KG: "))
        Height = int(input("Put in your height in CM: "))
        calculated_bmi = bmi_calc(Weight=Weight, Height=Height)
        summary_is = bmi_summary(calculated_bmi)
        list_is = [str(Name), str(Age) + " Yrs", str(Weight) + " Kg", str(Height) + "
Cm", str(calculated_bmi),str(summary_is)]
        str_is = f'{str(Name)}, {str(Age) + " Yrs"}, {str(Weight) + " Kg"},
{str(Height) + " Cm"}, {str(calculated_bmi)},{str(summary_is)}\n'
        with open(f'{name} Bmi Calculated {str(time.strftime("%d . %m . %Y"))}.txt',
'a') as file_created:
            file_created.write(str_is)




def bmi_inputer(table_data, avg_bmi_is):
    global name
    with open(f'{name} Bmi Calculated {time.strftime("%d . %m . %Y")}.txt', "w") as
fp:
        fp.write("\n")
        fp.write("-" * 110)
        fp.write("\n")
        fp.write(f"\t\t\t\t\t\t\t\t\t\t BMI CALCULATED BY {name.upper()}")
        fp.write("\n")
        fp.write("-" * 110)
        fp.write("\n")
        fp.writelines(table_data.replace(":","-").replace("|","  "))
        fp.write("\n")
        fp.write("-" * 110)
        fp.write("\n")
        fp.write("\t" * 10 + f" Average Bmi is {str(avg_bmi_is.__round__(2))}")
        fp.write("\n")
        fp.write("-" * 110)
        fp.close()
name = input("Please inform us what's your name : ")
while True:

    Offer_Conversions = input("Would you like to convert your imperial units to
metric? (yes / no / quit ): ")
    if Offer_Conversions.startswith("q"):

        with open(f'{name} Bmi Calculated {time.strftime("%d . %m . %Y")}.txt', 'r')
as file:
            list_items = file.read().split("\n")
            item_list = []
            for i in range(len(list_items)):
                item_individual_list = list_items[i].split(",")
                if item_individual_list != ['']:
                    list_append = item_individual_list
                    item_list.append(list_append)
            headers = ['Name', 'Age', 'Weight', 'Height', 'Bmi','\t\t\t\t\tSummary']
```

```
            call_the_name("BMI SUMMARY")
            print(tabulate(item_list, headers=headers, tablefmt='fancy_grid'))
            input("Press enter to continue...")
            data_input = tabulate(item_list, headers=headers, tablefmt='simple')

            avg_bmi = 0
            count = 0
            print(item_list)
            for i in range(len(item_list)):
                avg_bmi += float(item_list[i][4].replace("$", ""))
                count += 1
            avg = avg_bmi / count
            bmi_inputer(data_input, avg_bmi_is=avg)

        call_the_name("Thanks For using Bmi Calculator !")
        break
    ask_metric_conversion(Offer_Conversions)
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

= RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\Bmi Calculator\Bmi Main.py
Please inform us what's your name : Jaydeep
Would you like to convert your imperial units to metric? (yes / no / quit ): no
============================================================
              B M I   C A L C U L A T O R
============================================================

Put in your age: 17
Put in your name: Jay
Put in your weight in KG: 40
Put in your height in CM: 140
Good! You are normal keep it.
Would you like to convert your imperial units to metric? (yes / no / quit ): q
=========================================================
              B M I   S U M M A R Y
=========================================================

╒═══════╤═══════╤══════════╤══════════╤═══════╤═══════════════════════════╕
│ Name  │ Age   │ Weight   │ Height   │ Bmi   │                           │
╞═══════╪═══════╪══════════╪══════════╪═══════╪═══════════════════════════╡
│ Jay   │ 17 Yrs│ 40 Kg    │ 140 Cm   │ 20.41 │ Good! You are normal keep it. │
╘═══════╧═══════╧══════════╧══════════╧═══════╧═══════════════════════════╛
                                                        Summary
Press enter to continue...
```

Q : 15 Online Restaurant

```
from time import sleep
from tabulate import tabulate

def get_all_items():
    available_items = open("C:\\Users\\JaySs\\Desktop\\Final
Programs\\Completed\\Online Restrauant\\Online Restaurant Menu.txt", "r")
    list_items = available_items.read().split("\n")
    item_list = []
    for i in range(len(list_items)):
        item_individual_list = list_items[i].split(",")
        list_append = item_individual_list
        item_list.append(list_append)
    return item_list

def call_the_name(y):

    add = "\t\t"
    for i in y:
        add += i + " "
    print("=" * (len(add) + 32))
    print(str(add).upper())
```

```
    print("=" * (len(add) + 32))
    print()

a_list = get_all_items()

def bill(x, custom_name):
    with open(f"{custom_name}'s Bill.txt", 'a') as fp:
        fp.write(x)
    fp.close()

def invoice_gen(x, table_data, total):
    with open(f"{x}'s Bill.txt", "w") as file:
        file.write("\n")
        file.write("_" * 69)
        file.write("\n")
        file.write("\t\t\t\t  R E S T A U R A N T  B I L L")
        file.write("\n")
        file.write("_" * 69)
        file.write("\n")
        file.write("\n")
        file.write("\n")
        file.write("---------+--------+----------+----------+--------")
        file.writelines(table_data)
        file.write("\n")
        file.write("---------+--------+----------+----------+--------")
        file.write("\n")
        file.write("\n")
        file.write("_" * 69)
        file.write("\n")
        file.write("\t" * 10 + " Grand Total | " + str(total) + "$")
        file.write("\n")
        file.write("_" * 69)
        file.close()

def test(x):
    global a_list
    global name
    cut_name = x
    while True:


        if not a_list:
            print("Closing Restaurant........")
            break
        elif a_list:
            call_the_name("The Rockers Restaurant")

            head = ["Sr. No.", "Item Name", "Item Prize", "Category", "Quantity
Left"]

            print(tabulate(a_list, headers=head, tablefmt="fancy_grid",
showindex=True))
            show_data = int(input("Which item would you like to purchase : "))
            invoice_data = input("How much quantity : ")
            new_qty = str(int(a_list[show_data][3]) - int(invoice_data))
            while int(new_qty) < 0:
                if not a_list:
                    print("Closing Restaurant........")
                    break
                print("We don't have that much... ")
                print("Please reduce your quantity...Sorry fo inconvenience ")
                invoice_data = input("How much quantity you would like to have : ")
                new_qty = str(int(a_list[show_data][3]) - int(invoice_data))
            if int(new_qty) >= 0:
                if not a_list:
```

```
                    print("Closing Restaurant........")
                    break
                print("Would like to buy anything else ?")
                asking = input("Yes[y] | No[n] : ").lower()
                while asking == "y" or asking == "yes":
                    if not a_list:
                        print("Closing Restaurant........")
                        break
                    a_list[show_data][3] = new_qty

                    list_data = f"{a_list[show_data][0]},{invoice_data}
nos,{a_list[show_data][1]}$,{int(a_list[show_data][1]) * int(invoice_data)}$\n"
                    if int(a_list[show_data][3]) == 0:
                        a_list.pop(show_data)
                    print(list_data)
                    bill(str(list_data) + "\n", cut_name)
                    test(name)
                if asking == "n" or asking == "no":
                    a_list[show_data][3] = new_qty

                    bill_data_enter = f"{a_list[show_data][0]},{invoice_data}
nos,{a_list[show_data][1]}$,{int(a_list[show_data][1]) * int(invoice_data)}$\n"
                    if int(a_list[show_data][3]) == 0:
                        a_list.pop(show_data)
                    bill(str(bill_data_enter) + "\n", cut_name)

                    with open(f"{cut_name}'s Bill.txt", 'r') as fp:
                        list_items = fp.read().split("\n")
                        item_list = []
                        for i in range(len(list_items)):
                            item_individual_list = list_items[i]
                            list_append = item_individual_list.split(",")
                            if list_append != ['']:
                                item_list.append(list_append)

                        call_the_name("YOUR GRAND TOTAL")
                        show_data = tabulate(item_list, headers=['Item Number', 'Item
Name', 'Quantity', 'Prize', 'Total'], tablefmt="fancy_grid", showindex=True)
                        print(show_data)
                        grand_total = 0
                        for i in range(len(item_list)):
                            grand_total += int(item_list[i][3].replace("$", ""))
                        print("GRAND TOTAL=", grand_total, "$")
                        sleep(3)
                        invoice_data = tabulate(item_list, headers=['Item Name',
'Quantity Bought ', 'Original Prize', 'Prize Total'], tablefmt="presto")
                        invoice_gen(cut_name, invoice_data, grand_total)
                        input("Press any key to continue ..")

                name = input("Hi Whats your name : ")
                test(name)

name = input("Hi What is your name : ")
test(name)
```

```
Menu :
Pizza,25,JunkFood,30
Pasta,30,JunkFood,10
Sauce,400,JunkFood,10
```

Output :

```
= RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\Online Restrauant\Online Restaurant Main.py
Hi What is your name : Jay
================================================================================
                T H E   R O C K E R S   R E S T A U R A N T
================================================================================
```

Sr. No.	Item Name	Item Prize	Category	Quantity Left
0	Pizza	25	JunkFood	30
1	Pasta	30	JunkFood	10
2	Sauce	400	JunkFood	10

```
Which item would you like to purchase : 0
How much quantity : 20
Would like to buy anything else ?
Yes[y] | No[n] : y

================================================================================
                T H E   R O C K E R S   R E S T A U R A N T
================================================================================
```

Sr. No.	Item Name	Item Prize	Category	Quantity Left
0	Pizza	25	JunkFood	10
1	Pasta	30	JunkFood	10
2	Sauce	400	JunkFood	10

```
Which item would you like to purchase : 2
How much quantity : 10
Would like to buy anything else ?
Yes[y] | No[n] : n
====================================================================
                Y O U R   G R A N D   T O T A L
====================================================================
```

Item Number	Item Name	Quantity	Prize	Total
0	Pizza	20 nos	25$	500$
1	Sauce	10 nos	400$	4000$

```
GRAND TOTAL= 4500 $
Press any key to continue ..
```

Q :16 Hangman Game

```
import random

name = input("WHAT IS YOUR NAME ? ").upper()
print("Good Luck !", name)
words = ["aback", "abaft", "abandoned"]
word = random.choice(words).upper()
print("GUESS THE WORD...(only one alphabet).")

guesses = ''
turns = int(input("HOW MANY TURNS WOULD YOU LIKE TO GIVE TO
PLAYER ? "))
while turns > 0:
    failed = 0

    for char in word:
        if char in guesses:
            print(" ", char, end=" â”ƒ")
        else:
            print(" ï¹Ž ", end=" â”ƒ ")
            failed += 1


    if failed == 0:

        print(name, "YOU WIN THE WORD GUESSING GAME...")

        print("THE WHOLE WORD IS:", word)

        break

    guess = input("GUESS AN ALPHABET:- ").upper()

    guesses += guess
    if guess not in word:
        turns -= 1
        print("YOU ARE WRONG !")

        print("YOU HAVE", + turns, 'MORE GUESSES')

        if turns == 0:

            print("YOU LOST THE GAME AS YOU HAVE USED YOUR
TURNS...")

            print("THE WHOLE WORD WAS:", word)
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

======= RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\Hangman.py =======
WHAT IS YOUR NAME ? Jaydeep
Good Luck ! JAYDEEP
GUESS THE WORD...(only one alphabet).
HOW MANY TURNS WOULD YOU LIKE TO GIVE TO PLAYER ? 10
 _ | _ | _ | _ | _ | _ | _ | _ | _ | GUESS AN ALPHABET:- a
 A | _ | A | _ | _ | _ | _ | _ | _ | GUESS AN ALPHABET:- b
 A | B | A | _ | _ | _ | _ | _ | _ | GUESS AN ALPHABET:- n
 A | B | A | N | _ | _ | N | _ | _ | GUESS AN ALPHABET:- d
 A | B | A | N | D | _ | N | _ | D |GUESS AN ALPHABET:- e
 A | B | A | N | D | _ | N | E | D |GUESS AN ALPHABET:- o
 A | B | A | N | D | O | N | E | D |JAYDEEP YOU WIN THE WORD GUESSING GAME...
THE WHOLE WORD IS: ABANDONED
```

Q: 17 Online Trivia

```
import requests
from time import sleep
number=input("number of questions: :")
url_4 = f"""https://opentdb.com/api.php?amount={number}&type=boolean"""
quiz = {}
detail = requests.get(url_4)
data_json = detail.json()

for i in range(len(data_json["results"])):


    a = {i: {
        "Category": f'{data_json["results"][i]["category"].replace("&quot;",
"").replace("&&#039;", "").replace("&#039;I&#039;", "").replace("&#039;",
"").replace(":", ",")}',
        "Difficulty": f'{data_json["results"][i]["difficulty"].replace("&quot;",
"").replace("&&#039;", "").replace("&#039;I&#039;", "").replace("&#039;",
"").title()}',
        "Question": f'{data_json["results"][i]["question"].replace("&quot;",
"").replace("&&#039;", "").replace("&#039;I&#039;", "").replace("&#039;", "")}',
        "Answer": f'{data_json["results"][i]["correct_answer"].replace("&quot;",
"").replace("&&#039;", "").replace("&#039;I&#039;", "").replace("&#039;", "")}'
    }}
    quiz.update(a)
def check_ans(question, ans, score):
    if quiz[question]['Answer'].lower() == ans.lower():
        print("Correct Answer! \nYour score is", score + 1)
        return True
    else:
        print("Wrong Answer! \nYour score is", score - 1)
        return False


while True:
    score = 0
    for question in quiz:

        while True:
            if quiz[question]['Question'] == "":
                break
            else:
                print("\n" * 10)
                print("=" * 50)
                print("\t\tQuestion number :", int(question) + 1)
                print("="*50)
                print("\tDifficulty Level : ", quiz[question]['Difficulty'])
                print("\tCategory : ", quiz[question]['Category'])
                print("=" * 50)
                print()
                print("Question : ",quiz[question]['Question'])
                print()

                answer = input("Enter Answer (To skip type 'skip') : ")
                print("\n" * 10)
                if answer == "skip":
                    break
                check = check_ans(question, answer, score)
                if check is True:
                    score += 1
                    print("Wait moving to next question...")
                    sleep(6)
                    break
                elif check is False:
```

```
                    score-= 1
                    print("Point deducted...")
                    print(f"The correct answer is {quiz[question]['Answer']}")
                    print("Wait moving to next question...")
                    sleep(6)
                    break

    break
print("\n" * 10)
print("Your final score is", score, "!")
print("Thanks for playing! ")
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

= RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\Online Trivia Gameplay.py
number of questions: :2
================================================
               Question number : 1
================================================
       Difficulty Level :  Medium
       Category :  Science, Computers
================================================

Question :  To bypass US Munitions Export Laws, the creator of the PGP published all the source code in book form.

Enter Answer (To skip type 'skip') : skip
================================================
               Question number : 2
================================================
       Difficulty Level :  Hard
       Category :  Entertainment, Japanese Anime & Manga
================================================

Question :  Throughout the entirety of Dragon Ball Z, Goku only kills two characters: a miniboss named Yakon and Kid Buu.

Enter Answer (To skip type 'skip') : skip
Your final score is 0 !
Thanks for playing!
```

Q : 18 Password Generation With Logs in text file

```
import random
import string
from datetime import *

print('Hello, Welcome to Password generator!')
name_user = input("Pls provide your name = ")
ans = "Yes".casefold()
while ans == "yes" or ans == "y":
    today = date.today()
    now = datetime.now()
    today_ = today.strftime("%B %d, %Y")
    current_time = now.strftime("%H:%M:%S")

    know_reason = input("\n Can you tell us for which purpose you are generating
password? ")
    if know_reason == "":
        know_reason = "User has not provided the reason! "
    length = int(input('\nEnter the length of password: '))
    if length > 100:
        print("\n Please enter length less than 100.")
        length = int(input('\nEnter the length of password[less than 100]: '))
    print("What strength of password u wish?")
    print("\n", "1[Strong]\n", "2[Medium]\n", "3[Weak]\n", "4[Own]\n")
    here = input("==")
    while here != "1" and here != "2" and here != "3" and here != "4":
        print("Please input values from 1 to 3 . There are only three categories for
strength.")
        print("What strength of password u wish? ( Pls ans in range 1 to 3) ")
        print("\n", "1[Strong]\n", "2[Medium]\n", "3[Weak]\n", "4[Own]\n")
        here = input("==")
```

```
    logs = open("Password logs.txt", "a")
    lower = string.ascii_lowercase
    upper = string.ascii_uppercase
    num = string.digits
    strong_1 = lower + upper + num
    medium_1 = lower + upper
    Weak = lower
    if here == "1":
        entry = ""
        for i in range(length):
            entry += random.choice(strong_1)
        print("Your password generated is =", entry)
        log_entry = "A new password[strong] is generated by ", name_user, "\n
Length=", str(
            length), "\n Password is = ", entry, "\n Time=", current_time, "\n
Date=", today_, "\n Reason=", know_reason, f"\n{'-'*100}\n"
        logs.writelines(log_entry)
        logs.close()
    elif here == "2":
        entry = ""
        for i in range(length):
            entry += random.choice(medium_1)
        print("Your password generated is =", entry)
        log_entry = "\nA new password[medium] is generated by ", name_user, "\n
Length=", str(
            length), "\n Password is = ", entry, "\n Time=", current_time, "\n
Date=", today_, "\n Reason=", know_reason, f"\n{'-'*100}\n"
        logs.writelines(log_entry)
        logs.close()
    elif here == "3":
        entry = ""
        for i in range(length):
            entry += random.choice(Weak)
        print("Your password generated is =", entry)
        log_entry = "\nA new password[Weak] is generated by ", name_user, "\n
Length=", str(
            length), "\n Password is = ", entry, "\n Time=", current_time, "\n
Date=", today_, "\n Reason=", know_reason, f"\n{'-'*100}\n"
        logs.writelines(log_entry)
        logs.close()
    elif here == "4":
        entry = input("Enter your own password :")
        print("Your password  is =", entry)
        log_entry = "\nA new password[own] is  by ", name_user, "\n Length=", str(
            length), "\n Password is = ", entry, "\n Time=", current_time, "\n
Date=", today_, "\n Reason=", know_reason, f"\n{'-'*100}\n"
        logs.writelines(log_entry)
        logs.close()
    logs.close()
    ans = input("You want to generate one more password? yes/no ").casefold()
```

Output:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

= RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\PASSWORD GENERATOR [ + logs ].py
Hello, Welcome to Password generator!
Pls provide your name = Jaydeep

 Can you tell us for which purpose you are generating password? No

Enter the length of password: 10
What strength of password u wish?

 1[Strong]
 2[Medium]
 3[Weak]
 4[Own]

==1
Your password generated is = ZRDBGUb2au
You want to generate one more password? yes/no no
```

Q:19 Program to find the number of prime numbers between two numbers

```
start=int(input("Enter the initial value : "))
end=int(input("Enter the final value : "))
list_of_prime=[]
for i in range(start,end+1):
    if i>1:
        for j in range(2,i):
            if(i%j==0):
                break

        else:

            list_of_prime.append(i)
print(f"The numbers of prime numbers betwwen {start} and {end}
is/are = {len(list_of_prime)}")
for num in list_of_prime:
    print(num,end=" | ")
```

Output:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

=== RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\3rdrevision tour.py ==
Enter the initial value : 10
Enter the final value : 100
The numbers of prime numbers betwwen 10 and 100 is/are = 21
11 | 13 | 17 | 19 | 23 | 29 | 31 | 37 | 41 | 43 | 47 | 53 | 59 | 61 | 67 | 71 | 73 | 79 | 83 | 89 | 97 |
```

Q:20 Program to calculate the lower and upper count from a text file

```
myfile=open(input("Enter the file directtory like 'c:\\Users
\\JaySs\\Desktop\\poem.txt'"),"r")
ch=myfile.read()
lcount=0
ucount=0
print()
leng=ch.__len__()
while leng>0:
     if ch.isupper()==True:
          ucount=ucount+1
          leng=leng-1
     else:
          lcount=lcount+1
          leng=leng-1

print("Upper case letters in the file:",ucount)
print("Lower case letters in the file:",lcount)
myfile.close()
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

====== RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\PROGRAM 20.py =====
Enter the file directtory like 'c:\Users\JaySs\Desktop\poem.txt'c:\Users\JaySs\Desktop\poem.txt

Upper case letters in the file: 0
Lower case letters in the file: 35
```

Q:21 Program to check the number is negative,zero,positive

```
def checkNumber(given_Num):

    if(given_Num > 0):
        print("The given number", given_Num, "is positive")

    elif(given_Num < 0):
        print("The given number", given_Num, "is negative")
    else:
        print("The given number", given_Num, "is zero")
checkNumber(int(input("Enter the number to check :")))
```

Output:

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

===== RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\1PROGRAM 21.py =====
Enter the number to check :-31
The given number -31 is negative
```

Q:22 Program to check if the year given is leap year or not

```
def check_leap(given_year):
    if (given_year % 4) == 0:
        if (given_year % 100) == 0:
            if (given_year % 400) == 0:
                print("Given year", given_year, "is leap year")
            else:
                print("Given year", given_year, "is not leap
year")
        else:
            print("Given year", given_year, "is leap year")
    else:
        print("Given year", given_year, "is not leap year")
check_leap(int(input("Please enter the year you want to check :
")))
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

======= RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\program2.py ======
Please enter the year you want to check : 2004
Given year 2004 is leap year
```

Q:23 Program to get the min value from list

```
L=list(input('Enter list values'))
length=len(L)
min=L[0]
loc=0
for i in range(length):
    if L[i]<min:
        min=L[i]
        loc=i
print("Minimum value=",min)
print("Location=",loc)
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

========= RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\new1.py ========
Enter list values32165
Minimum value= 1
Location= 2
```

Q : 24 Program to calculate the location of item in list

```
aDict={'Yash':1,"Aniket":2,"Vatsal":3,"Jaydeep":4}
val=input('Enter value')
flag=0
for k in aDict:
    if val==aDict[k]:
        print("Value found at key : ",k)
        flag=1
if flag==0:
    print("Value you enetered is not in our database !")
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

========= RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\new2.py ========
Enter value4
Value you enetered is not in our database !
```

Q : 25

```
file1=open("data.txt","r")
line=" "
count=0
while line:
    line=file1.readline()
    s=line.split()
    for word in s:
        count+=1
print("Number of words in file are =",count)
file1.close()
```

Output :

```
Python 3.10.0 (tags/v3.10.0:b494f59, Oct  4 2021, 19:00:18) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

========= RESTART: C:\Users\JaySs\Desktop\Cs programs Completed\new3.py ========
Number of words in file are = 4
```