"""Q1. Write a program in python to convert temperature from Fahrenheit to Celsius."""

user\_input = float(input("Enter temperature measure in Fahrenheit scale: "))

C\_measure = (user\_input-32)\*5/9

print("The temperature measure in Celsius is", C\_measure)

"""Q.2. Write a program in python to convert temperature from Celsius to Fahrenheit"""

user\_temp\_input = float(input("Enter temp measure in Celsius scale: "))

F\_measure = ((user\_temp\_input\*9/5)+32)

print("The temperature measure in Fahrenheit is", F\_measure)

""" Q.3.Find out roots of a quadratic equation whose polynomials will be given by user """

from math import \*

a = int(input("Enter the Value of A: "))

b = int(input("Enter the Value of B: "))

c = int(input("Enter the Value of C: "))

d = pow(b,2) - (4\*a\*c)

sum1 = (-b + sqrt(d))/(2\*a)

sum2 = (-b - sqrt(d))/(2\*a)

print(f"The Roots of the Equation are {sum1} & {sum2}")

"""

Q.4. Write a program in python to generate a report card of a students according to CBSE grade system. User will input 6 subject marks (English, Bengali/Hindi, Physics, Chemistry, Biology and Computer).Find out the total mark and grade. The grade will be calculated as follows:

91-100 – “A+”

81-90 – “A”

71-80 – “B+”

61-70 – “B”

51-60 – “C”

41-50 – “D”

31-40 – “E”

Below 40 – “Fail”

"""

input\_xm\_total = float(input("Enter full marks of exam: "))

input\_eng = float(input("Enter english marks: "))

input\_2ndLang = float(input("Enter 2nd Lang. marks: "))

input\_Phy = float(input("Enter Physics marks: "))

input\_Chem = float(input("Enter Chemistry marks: "))

input\_Bio = float(input("Enter biology marks: "))

input\_CS = float(input("Enter computer science marks: "))

total\_marks = (input\_eng) + (input\_2ndLang) + (input\_Phy) + (input\_Chem) + (input\_Bio) + (input\_CS)

print("Your total marks is", total\_marks)

grade = (total\_marks/(input\_xm\_total\*6))\*100

print("Your percentage is",grade,"%")

if grade >=91 and grade <= 100:

print("Your grade is A+")

if grade>=81 and grade <=90:

print("Your grade is A")

if grade >=71 and grade<= 80:

print("Your grade is B+")

if grade >=61 and grade <=70:

print("Your grade is B")

if grade >=51 and grade<=60:

print("Your grade is C")

if grade >=41 and grade<=50:

print("Your grade is D")

if grade >= 31 and grade <=40:

print("Your grade is E")

if grade <=40:

print("You failed this examination")

print("Better luck next time")

"""Q.5.Write a program in python to print first 100 even numbers"""

count = 0

for i in range(0,200):

if i%2 == 0:

print(i, end = " ")

if count == 100:

break

else:

continue

count += 1

"""Q.6. Write a program in python to print all the multiples of 5 from 1 to 100 """

for i in range(1,101):

if i%5 == 0:

print(i, end = " ")

"""

Q.7. Write a program in python to print the following series :

1! + 2! + 3! + …………………..+N!

"""

sum = 0

fact = 1

input\_num = int(input("Enter number: "))

for i in range(1, input\_num+1):

fact = fact\*i

sum += fact

print(sum)

"""

Q.8.Write a program in python to print the following series :

X1+ X2 + X3 + …………………..+Xn

"""

input1 = int(input("Enter number: "))

extend = int(input("Enter iterable value: "))

sum = 0

for i in range(1, extend+1):

sum = sum + pow(input1,i)

print(sum)

"""

Q.9.Write a program in python to print the following series :

1^1+ 5^5 + 10^10 + …………………..+N^N

"""

range1 = int(input("Enter range: "))

sum = pow(1,1)

for i in range(0, range1):

func = i\*5

sum = sum + pow(func,func)

print(sum-1)

"""

Q.10.Write a program in python to print the following series :

1/x^1 + 2/x^2 + 3/x^3 + …………………..+N/x^N

"""

extend = int(input("Enter iterable value: "))

sum = 0

for i in range(1, extend+1):

m = i/pow(extend,i)

sum = sum + m

print(sum)

"""

Q.11.Write a program in python to print the following series :

1! + 2! + 3! + …………………..+N!

"""

user\_input = int(input("Enter number: "))

fact = 1

for i in range(1,user\_input+1):

fact \*= i

sum+=fact

print(sum)

"""

Q.12. Write a program in python to print factorial of a number given by user.

"""

user\_num = int(input("Enter number: "))

fact = 1

for i in range(1, user\_num+1):

fact\*=i

print(fact)

"""

Q.13. Write a program in python to check whether a user given number is an Armstrong number or not.

"""

num\_input = int(input("Enter number: "))

m = num\_input

sum = 0

temp = num\_input

count = 0

while num\_input!=0:

num\_input//=10

count = count+1

for i in range(0, count):

num =temp%10

sum = sum + pow(num,count)

temp//=10

if sum != m:

print("The entered number is not an Armstrong Number.")

else:

print("The entered number is an Armstrong Number.")

"""

Q.14. Write a program in python to print Fibonacci series upto N terms given by user

"""

num\_input = 6

first\_term = 0

scnd\_term = 1

list1 =[0, 1]

for i in range(0,num\_input-2):

thrd = scnd\_term+ first\_term

first\_term = scnd\_term

scnd\_term = thrd

list1.append(thrd)

print(f"The fibonacci Series upto {num\_input}th is:", end =" ")

print(\*list1, sep = ", ")

'''

Q.15. Write a program in python to find out GCD of two numbers given by user.

'''

def GCD(x: int, y: int):

num1 = x

num2 = y

num3 = 0

if num1>num2:

while num2 != 0:

num3 = num1%num2

num1 = num2

num2 = num3

print(f"The GCD of {x} and {y} is: {num1}")

return num1

if num2>num1:

while num1 != 0:

num3 = num2%num1

num2 = num1

num1 = num3

print(f"The GCD of {x} and {y} is: {num2}")

return num2

user\_num = input("Enter two numbers: ")

list\_num = user\_num.split(", ")

GCD(int(list\_num[0]),int(list\_num[1]))

"""

Q.16. Write a program in python to find out LCM of two numbers given by user.

"""

def GCD(x: int, y: int):

num1 = x

num2 = y

num3 = 0

if num1>num2:

while num2 != 0:

num3 = num1%num2

num1 = num2

num2 = num3

print(f"The GCD of {x} and {y} is: {num1}")

return num1

if num2>num1:

while num1 != 0:

num3 = num2%num1

num2 = num1

num1 = num3

print(f"The GCD of {x} and {y} is: {num2}")

return num2

user\_num = input("Enter two numbers: ")

list\_num = user\_num.split(", ")

hcf = GCD(int(list\_num[0]),int(list\_num[1]))

multi\_nums = int(list\_num[0])\*int(list\_num[1])

lcm = multi\_nums/hcf

print(f"The LCM of {list\_num[0]} and {list\_num[1]} is {lcm}")

"""

Q.17. Write a program in python to print only the even position elements of a list given by user.

"""

user\_in = input("Enter elements for list: ")

list\_user = user\_in.split(",")

print("The list is: ", list\_user)

length = len(list\_user)

print("The even position elements are: ")

for i in range(length-1):

if i%2 == 0:

print(list\_user[i+1], sep = ", ")

else:

pass

"""

Q.18. Write a program in python to print a list in reverse order using for loop

"""

list1 = [1, 2, 3, 4, 5, 6, 7, 8]

print(list1)

list2 = []

for i in range(len(list1)-1, -1,-1):

list2.append(list1[i])

print(list2)

"""

Q.19. Write a program in python to search any number within a list. The list and the number to be find out will be given by user.

"""

user\_input = input("Enter numbers for adding in list: ")

list1 = user\_input.split(", ")

print(list1)

search = int(input("Enter the number you want to search in the list: "))

for i in range(len(list1)):

if search == int(list1[i]):

print(f"The number {int(search)} is at position {i+1} in the list")

else:

continue

'''

Q.20. Write a program in python to print only the odd numbers from a tuple. The tuple will be given by user.

'''

user\_tuple = eval(input("Enter a numeric tuple: "))

length = len(user\_tuple)

print(f"The tuple entered by you is: {user\_tuple}")

list1 = []

for i in range(0, length):

if int(user\_tuple[i])%2 != 0:

list1.append(str(user\_tuple[i]))

print("The odd numbers from the tuple are:")

print(\*list1,sep=", ")

"""

Q.21. Write a program in python to print a string in reverse order using loop. The string will be given by user.

"""

user\_input = input("Enter string: ")

length = len(user\_input)

i = length-1

while i!= -1:

print(user\_input[i], end = "")

i -=1

'''

Q.22. Write a program in python to print even position element and odd position element of a user given string individually.

'''

user\_str = input("Enter your string: ")

length = len(user\_str)

list\_odd = []

list\_even = []

for i in range(0, length):

if i%2 !=0:

list\_odd.append(user\_str[i])

if i%2 ==0:

list\_even.append(user\_str[i])

print('The even position string elements are:')

print(\*list\_odd, sep=", ")

print("The odd position string elements are:")

print(\*list\_even, sep = ", ")

'''

Q.23.Write a program to print all the keys of a dictionary and all the values of a dictionary individually.

'''

dictionary = {'a': 1, 'b': 2, 'c': 3, 'd': 4}

print(f"The Dictionary is: {dictionary}")

keys = dictionary.keys()

val = dictionary.values()

print("The keys of the dictionary are: ")

print(\*keys, sep=", ")

print("The values of the dictionary are: ")

print(\*val, sep=", ")

'''

Q.24. Write a program in python to find out the largest and smallest number in an integer list given by user.

'''

user\_list = eval(input("Enter a list: "))

print(user\_list)

largest = smallest = user\_list[0]

for item in user\_list:

if item>largest:

largest = item

if item<smallest:

smallest = item

print(f"The largest number is: {largest}")

print(f'The smallest number is: {smallest}')

'''

Q.25. Write a program in python to find out how many vowels are there in a user given string.

'''

def vowel(x: str):

'''

Gives number of `Vowels` present in a `user given` string.

'''

length = len(x)

list1 = []

for i in range(length):

if x[i].casefold() in 'aeiou':

list1.append(x[i])

print(f"The number vowels are present in your input is/are: {len(list1)} and the vowel(s) is/are: ", \*list1)

input1 = input("Enter your string: ")

vowel(input1)