UNIT 2

Divisble by 7:

x=int(input("Enter a number: "))

if x%7==0:

print('Given number {} is divisible by 7'.format(x))

else:

print("End of program")

Marks secured distinction:

a=int(input("Enter marks obtained: "))

if a>75:

print("User secured Distinction")

else:

print("User did not secure Distinction")

Balance Low:

a=int(input("Enter balance in your account: "))

if a>1000:

print("Sufficient Balanc")

else:

print("Balance is low")

Nested if (positive and multiple of 5):

x=int(input("Enter value of x: "))

if x>0:

if(x%5==0):

print("X is a multiple of 5")

else:

print("X is not a multiple of 5")

else:

print("X is negative")

Admission Criteria:

x=float(input("Enter percentage of class 12th: "))

if x>60:

y=float(input("Enter JEE Mains Percentile: "))

if y>=85:

print("You're eligible for admission is B.Tech Computer Science and Engineering")

else:

print("Sorry you're not eligible for admission(JEE mains criteria not fulfilled)")

else:

print("Sorry you're not eligible(Basic class 12th criteria not fulfilled)")

Greatest Number :

x=int(input("Enter the value of X: "))

y=int(input("Enter the value of Y: "))

z=int(input("Enter the value of Z: "))

if (x>y & x>z):

print("The Number",x,"is the greatest")

elif (y>x & y>z):

print("The Number",y,"is the greatest")

else:

print("The Number",z,"is the greatest")

Character/Alphabet:

print("Enter '0' for exit.")

ch=input("Enter any character: ")

if ch=='0':

exit()

elif (ch>='A' and ch<='Z')or(ch>='a' and ch<='z'):

print("Given Character {} is an alphabet".format(ch))

elif (ch>='1' and ch<='9'):

print("Given Character {} is a number".format(ch))

else:

print("{} is not an alphabet nor a digit".format(ch))

LEAP YEAR:

a=int(input("Enter the year: "))

if a%4==0 and a%100!=0:

print(a,"is a leap year")

elif a%400==0:

print(a,"is a leap year")

else:

print(a,"is not a leap year")

Sides of a Triangle:

a=int(input("Enter length of first side"))

b=int(input("Enter length of second side"))

c=int(input("Enter length of third side"))

if a==b and b==c and a==c:

print("Equilateral Triangle")

elif a!=b and b!=c and a!=c:

print("Scalene Triangle")

else:

print("Isoceles Triangle")

Maximum number in one line:

a=int(input("Enter first number: "))

b=int(input("Enter second number: "))

max=a if a>b else b

print("Max = ",max)

Even number one line code:

a=int(input("Enter first number: "))

print("Number is even" if a%2==0 else "Number is odd")

COUNT THE ODD NUMBERS:

n=int(input("Enter n:"))

i=1

count=0

while i<=n:

if i%2!=0:

count=count+1

i=i+1

print("Count of odd numbers :",count)

FACTORIAL OF A NUMBER:

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

i=1

fact=1

if a==0:

print("Factorial = 1")

elif a<0:

print("Factorial of negative avlue not possible")

else:

while i<=a:

fact=fact\*i

i=i+1

print("Factorial is :",fact)

FACTORIAL REVERSE LOOP:

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

i=a

fact=1

if a==0:

print("Factorial = 1")

elif a<0:

print("Factorial of negative avlue not possible")

else:

while i>=1:

fact=fact\*i

i=i-1

print("Factorial is :",fact)

REVERSE OF A NUMBER:

n=int(input("Enter a number:"))

a=n

rev=0

rem=0

while n!=0:

rem=n%10

rev=rev\*10+rem

n=n//10

print("Reverse number :",rev)

PALINDROME NUMBER:

n=int(input("Enter a number:"))

a=n

rev=0

rem=0

while n!=0:

rem=n%10

rev=rev\*10+rem

n=n//10

if a==rev:

print("Number is Palindrome")

else:

print("Number is not Palindrome")

ARMSTRONG NUMBER (HW)

import math

n=int(input("Enter a number:"))

c=str(n)

l=len(c)

arm=n

sum=0

while n!=0:

rem=n%10

sum=sum+(math.pow(rem,l))

n = n // 10

print(sum)

if arm==sum:

print("Armstrong Number")

else:

print("Not an Armstrong Number")

SUM OF 0-Nth number:

num=int(input("num:"))

i=0

sum=0

while(i<=num)

sum=sum+i

i=i+1

else:

while(num<=0):

sum=sum+num

num=num+1

print("sum=",sum)

GCD PROGRAM:

a=int(input("Enter the first number: "))

b=int(input("Enter the second number: "))

if a==0 or b==0:

print("Value must be non zero")

else:

if a<b:

result=a

else:

result=b

while result:

if a%result ==0 and b%result==0:

break

result=result-1

print("gcd: ",result)

FIBBONACCI SERIES:

n=int(input("Enter the value of n: "))

a=0

b=1

i=0

while (i<=n):

print(a,end=" ")

res=a+b

a=b

b=res

i=i+1

LINEAR COLOUR SEARCH:

color=str(input("Enter colour name: "))

l1=["red","green","violet","indigo","orange","yellow","blue"]

for i in l1:

if i==color:

print("The colour is found")

else:

print("The colour is not found, updating the new list")

l1.append(color)

print(l1)

FILTRATION - from the given set of colours, print the colours which start with "y"

l1=["red","green","violet","indigo","orange","yellow","blue","hdgyus"]

for i in l1:

if i[0]=='y':

print(i)

MULTIPLICATION TABLE USING FOR LOOP:

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

b=1

for i in range(a,a\*11,a\*b):

b=b+1

print(i)

PRIME AND COMPOSITE NUMBER:

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

if a>1:

for i in range(2,(a//2)+1):

if a%i==0:

print("Composite Number")

break

else:

print("Prime Number")

else:

print(a,"is a Composite number")

PRINT PI UPTO Nth PLACE USING FOR LOOP:

import math

n=int(input("n: "))

b=math.pi

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

print("{:.{}f}".format(b,i))

PARENTHESIS NUMBER AND ERROR USING FOR LOOPS:

a=str(input("Enter paranthesis: "))

x=0

y=0

length=len(a)

for i in range(0,length):

if(a[i]=="("):

x=x+1

elif(a[i]==")"):

y=y+1

if(x==y):

print("Valid and Depth =",x)

elif y>x:

print("Not valid and errors =",y-x)

else:

print("Not valid and errors =",x-y)

MULTIPLICATION TABLE USING NESTED LOOPS:

print("Multiplication Table")

n=int(input("Enter the number upto which you want to print the table: "))

m=int(input("Enter the multiples: "))

print(" |", end='')

for j in range (1,n+1):

print(" ", j, end='')

print()

print("-----------------------------------------------")

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

print(i, "|", end='')

for j in range(1,m+1):

print(format(i\*j,"4d"),end='')

print()

PATTERN 1:

n=int(input("Rows: "))

m=int(input("Columns: ")) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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

for j in range(1,m+1):

print("\*",end='')

print()

REVERSE PATTERN:

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n=int(input("Rows: "))

for i in range(n,0,-1):

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

print("\*",end='')

print()

REVERSE NUMBER:

1234

123

12

1

n=int(input("Rows: "))

for i in range(n,0,-1):

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

print(j,end='')

print()

ALPHABET PATTERN:

A

AB

ABC

ABCD

ABCDE

val=65

n=int(input("Enter number of rows: "))

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

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

print(chr(val),end='')

val=val+1

val=65

print()

DISPLAY ALL PRIME NUMBERS FROM N TO M:

flag=0

n=int(input("Enter n(>=2): "))

m=int(input("Enter m(>=2): "))

print("List of prime numbers are: ")

for i in range(n,m+1):

for j in range(2,(i//2)+1):

if i%j==0:

flag=1

if flag==0:

print(i)

flag=0

TRANSPOSE OF A MATRIX:

matrix=[[1,2,3,4],[5,6,7,8],[9,10,11,12]]

matrix1=[[0,0,0],[0,0,0],[0,0,0],[0,0,0]]

print("Original matrix: ",matrix)

for i in range(3):

for j in range(4):

matrix1[j][i]=matrix[i][j]

print("Trapose: ",matrix1)

LOOP TERMINATES ON THE FIRST MULTIPLE OF 5(BREAK STATEMENT):

num=10

i=1

while(i<=num):

if i%5==0:

break

print(i)

i=i+1

PRINTS ONLY ODD NUMBER (CONTINUE STATEMENT):

for num in range(1,10):

if (num%2==0):

continue

print(num)

UNAWARE OF CODE (PASS STATEMENT):

a=10

b=20

if a<b:

pass

else:

print("b<a")

PRINTING ONLY THE EVEN NUMBERS(PASS STATEMENT APPROACH):

numbers=[1,2,4,3,6,5,7,10,9]

for num in numbers:

if num%2!=0:

pass

else:

print(num)

VOWELS(USAGE OF WHILE TRUE: BREAK,CONTINUE):

vowels="aeiouAEIOU"

while True:

char1=input("vowel, or 9 to quit: ")

if char1.isalpha() or char1 =="9":

if char1 =="9":

break

if char1 in vowels:

print("vowel")

else:

print("not vowel")

else:

print("wrong input")

continue