# NAME = ROBIN SINGH SAJWAN

# COURSE = BCA

# ROLL NO = 17

# STUDENT ID = 21041479

# <------wap to check if a number is armstrong or not------>

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#EXPLAINATION--->

# This code takes an input from the user and checks if it is an Armstrong number or not. An Armstrong number is a number that is equal to the sum of its own digits each raised to the power of the number of digits.

# CODE--->

def isArmstrongNumber(num):

sum = 0

temp = num

while temp > 0:

digit = temp % 10

sum += digit \*\* 3

temp //= 10

if num == sum:

print(num,"is an Armstrong number")

else:

print(num,"is not an Armstrong number")

num = 153

isArmstrongNumber(num)

# OUTPUT

# 153 is an Armstrong number

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# <------wap to print the element without any duplicacy in a list.

# EXPLAINATION--->

# This code creates a list from the given list list and removes any duplicates.

# CODE--->

list=[1,1,2,3,4,4,5,4,6]

temp=[]

for n in list:

if n not in temp:

temp.append(n)

else:

continue

print("list without duplicacy: ",temp)

# OUTPUT

# list without duplicacy: [1, 2, 3, 4, 5, 6]

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# <------wap to find the factorial of a number------>

# EXPLAINATION--->

#This code takes in an integer from the user, then calculates and prints the factorial of that number.

# CODE--->

num=int(input("enter the number: "))

factorial=1

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

factorial = factorial\*i

print("The factorial of",num,"is",factorial)

# OUPUT

# enter the number: 5

# The factorial of 5 is 120

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# <------wap to find the fibonacci series of a number------>

# EXPLAINATION--->

#This code calculates and prints a Fibonacci sequence of numbers up to a given number of terms.

# CODE--->

nterms = int(input("How many terms? "))

n1, n2 = 0, 1

count = 0

print("Fibonacci sequence:")

while count < nterms:

print(n1)

nth = n1 + n2

n1 = n2

n2 = nth

count += 1

# OUTPUT

# How many terms? 5

# Fibonacci sequence:

# 0

# 1

# 1

# 2

# 3

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# <------wap to printfirst three elements, the last three elements, and the middle elements of the list.

# of list------>

# EXPLAINATION--->

# This code takes an input list of numbers and prints out the first three elements, the last three elements, and the middle elements of the list.# CODE--->

inputList = [5, 1, 6, 8, 3]

print("Input list:", inputList)

lastElement = inputList[-3:]

firstElement = inputList[:3]

middleElement = inputList[1:-1]

print("Last element of the input list = ", lastElement)

print("starting element of the input list = ", firstElement)

print("middle element of the input list = ", middleElement)

# OUTPUT

# Input list: [5, 1, 6, 8, 3]

# Last element of the input list = [6, 8, 3]

# starting element of the input list = [5, 1, 6]

# middle element of the input list = [1, 6, 8]

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# <------wap to check if a number is pallindrome or not------>

# EXPLAINATION--->

# This code takes an input from the user and checks if it is a palindrome or not. A palindrome is a word, number, phrase, or other sequence of characters which reads the same backward as forward.

# CODE--->

a=int(input("enter the number"))

temp=a

reverse=0

while(a>0):

digit=a%10

reverse=reverse\*10+digit

a=a//10

if(temp == reverse):

print("the no. is pallindrome")

else:

print("ther no. is not pallindrome")

# OUTPUT

# enter the number 121

# the no. is palindrome

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# <------wap to check whether a number is a perfect number------>

# EXPLAINATION--->

#This code checks if the number entered by the user is a perfect number or not.A perfect number is a positive integer that is equal to the sum of its proper positive divisors, that is, the sum of its positive divisors excluding the number itself.

# CODE--->

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

sum1 = 0

for i in range(1, n):

if(n % i == 0):

sum1 = sum1 + i

if (sum1 == n):

print("The number is a Perfect number!")

else:

print("The number is not a Perfect number!")

# OUTPUT

# Enter any number: 232

# The number is not a Perfect number!

#Enter any number: 6

# The number is a Perfect number!