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Batch :** [**Batch - 6 (MTF) - Batch 2027**](https://classroom.google.com/c/Nzk5OTY1NzU1NzE4) **Batch Time: 12:10 PM**  
  
**Conditional statement:**  
  
**#Basic If-Else Problems:**

#1 Write a program to check whether a number is positive, negative, or zero.

'''

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

if num == 0:

print("Entered Number is 0")

elif num%2 == 0:

print("Entered Number is Even")

else :

print("Entered Numver is Odd")

'''

#2 Write a program to check whether a number is even or odd.

'''

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

if num%2 == 0:

print("Entered Number is Even")

else :

print("Entered Numver is Odd")

'''

#3 Write a program to check if a given year is a leap year or not.

'''

year = int(input("Enter Year: "))

if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):

print("Leap Year")

else:

print("Not Leap Year")

'''

#4 Write a program to find the greatest of two numbers.

'''

num1 = int(input("Enter First Number : "))

num2 = int(input("Enter Second Number : "))

if (num1 == num2):

print("The entered numbers are equal")

elif (num1>num2):

print("The First number is greater")

else :

print("The second number is greater")

'''

#5 Write a program to check whether a person is eligible to vote (age >= 18).

'''

age = int(input("Enter Age : "))

if age >= 18:

print("Eligible to Vote")

else :

print("NOT Eligible to Vote")

'''

#6 Write a program to check whether a given character is a vowel or consonant.

'''

char = input("Enter character : ")

if char == 'a' or char == 'e' or char == 'i' or char == 'o' or char == 'u':

print("Entered Character is a Vowel")

elif len(char) >=2:

print("Enter single Character")

else :

print("Entered Character is a Consonant")

'''

#7 Write a program to check if a number is divisible by 5.

'''

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

if num % 5 == 0:

print("Divisible by 5")

else :

print("Not divisible by 5")

'''

#8 Write a program to determine whether a given number is a single-digit, two-digit, or more than two-digit number.

'''

num = input("Enter number : ")

length = len(num)

if length == 1 :

print("Single Digit")

elif length == 2 :

print("Two Digit")

else :

print("More than two-digit")

'''

#9 Write a program to check whether a student has passed or failed (passing marks = 40).

'''

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

if marks >= 40 :

print("Passed")

else :

print("Failed")

'''

#10 Write a program to find whether the entered number is a multiple of both 3 and 7.

'''

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

if num % 3 == 0 and num % 7 == 0:

print("Multiple of both 3 and 7")

else:

print("Not a multiple of both 3 and 7")

'''

**#Ladder If & Nested If:**

#1 Write a program to find the greatest among three numbers.

'''

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

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

c = int(input("Enter third number : "))

if a >= b and a >= c:

print("The greatest number is:", a)

elif b >= a and b >= c:

print("The greatest number is:", b)

else:

print("The greatest number is:", c)

'''

#2# Write a program to classify a person based on age: Child (<13), Teenager (13-19), Adult (20-59), Senior (60+).

'''

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

if age < 13:

print("Child")

elif age >= 13 and age <=19:

print("Teenager")

elif age >= 20 and age <=59:

print("Adult")

elif age > 60:

print("Senior")

else :

print("60??? No condition when age is 60")

'''

#3 Write a program to assign grades based on marks: 90-100: A, 75-89: B, 50-74: C, 35-49: D, <35: Fail.

'''

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

if marks < 35:9

print("Fail")

elif marks >= 35 and marks <=49:

print("Grade D")

elif marks >= 50 and marks <=74:

print("Grade C")

elif marks >= 75 and marks <=89:

print("Grade B")

elif marks >= 90 and marks <=100:

print("Grade A")

else :

print("Enter valid grades")

'''

#4 Write a program to check the type of triangle (equilateral, isosceles, or scalene) based on sides.

'''

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

b = int(input("Enter side b: "))

c = int(input("Enter side c: "))

if a + b > c and b + c > a and c + a > b:

if a == b == c:

print("Equilateral Triangle")

elif a == b or b == c or c == a:

print("Isosceles Triangle")

else:

print("Scalene Triangle")

else:

print("Not a Triangle")

'''

#5 Write a program to check if a character is uppercase, lowercase, digit, or special symbol.

'''

char = input("Enter a character: ")

if len(char)==1 :

if char.isupper():

print("The character is an Uppercase letter.")

elif char.islower():

print("The character is a Lowercase letter.")

elif char.isdigit():

print("The character is a Digit.")

else:

print("The character is a Special symbol.")

else :

print("Enter Single character")

'''

#6 Write a program to calculate electricity bill based on units: Up to 100 units: ₹5 per unit, 101–200 units: ₹7 per unit, Above 200 units: ₹10 per unit.

'''

units = int(input("Enter total unuts: "))

if units <= 100:

bill = units \* 5

elif units >100 and units <= 200:

bill = 500 + ((units - 100) \* 7)

else:

bill = 500 + 700 + ((units - 200) \* 10)

print("Yout bill is : ", bill,"Rupees")

'''

#7Write a program to determine the largest of four numbers using nested if.

'''

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

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

c = int(input("Enter third number : "))

d = int(input("Enter Fourth number : "))

largest = 0

if a == b or a == c or a == d or b == c or b == d or c == d :

print("Enter Distinct numbers ")

elif a > b :

if a > c :

if a > d :

largest = a

else :

largest = d

else :

if c > d :

largest = c

else :

largest = d

print("The largest number is : ", largest)

else:

if b > c :

if b > d :

largest = b

else:

largest = d

else:

if c > d :

largest = c

else:

largest = d

print("The largest number is : ", largest)

'''

#8 Write a program to check if a given year is a century year and also a leap year.

'''

year = int(input("Enter Year: "))

if (year % 400 == 0):

print("Century Year and also Leap Year")

else:

print("Not a Century Year and Leap Year")

'''

'''

year = int(input("Enter Year: "))

if year % 100 == 0:

if year % 400 == 0:

print("Century Year and Leap Year")

else:

print("Century Year but not a Leap Year")

else:

if year % 4 == 0:

print("Not a Century Year but a Leap Year")

else:

print("Neither a Century Year nor a Leap Year")

'''

#9 Write a program to classify BMI value: Underweight (<18.5), Normal (18.5-24.9), Overweight (25-29.9), Obese (30+).

'''

mass = float(input("Enter Weight/Mass : "))

height = float(input("Enter Height in meters : "))

bmi = (mass)/((height)\*\*2)

if bmi < 18.5 :

print("Underweight")

elif bmi >= 18.5 and bmi <= 24.9 :

print("Normal")

elif bmi >= 25 and bmi <= 29.9:

print("Overweight")

else :

print("OBESE")

print("BMI is : ",bmi)

'''

#10 Write a program to display the smallest number among three using nested if.

'''

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

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

c = int(input("Enter third number : "))

low = 0

if a == b or b == c or a == c :

print("Enter unique numbers")

elif a < b :

if a < c :

print(a," is the smallest number")

else :

print(c," is the smallest number")

else :

if b < c :

print(b," is the smallest number")

else :

print(c," is the smallest number")

'''

**#For Loop Problems:**

#1 Write a program using a for loop to print all Armstrong numbers between 100 and 999. (Armstrong number: sum of cubes of digits equals the number itself. Example: 153 => 1³+5³+3³ = 153).

#i = 100

#while i >= 100 and i <= 999 :

# string = str(i)

#2 Write a program to generate and display the first n prime numbers using a for loop.

'''

n = int(input("Enter number of prime numbers : "))

count = 0

num = 1

while count < n :

for i in range(2, num) :

if num % i == 0 :

break

else :

print(num , " ")

count = count+1

num = num+1

'''

#3 Write a program to display all numbers from 1 to 500 that are divisible by 3, but the sum of their digits should not exceed 10.

'''

for num in range(1, 501) :

if num % 3 == 0 :

sumd = 00

for digit in str(num) :

sumd = sumd + int(digit)

if sumd <= 10:

print(num)

'''

#4 Write a program using a for loop to print a pyramid of stars (\*) of height n. Example for n=4:

r'''

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

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

stars = 2 \* i - 1

print("\*" \* stars)

'''

#5 Write a program to accept a string and check whether it is a pangram (contains all 26 alphabets at least once) using a for loop.

'''

string = input("Enter string : ").lower()

alphabets = "qwertyuiopasdfghjklzxcvbnm"

found = 0

for i in range(0,26) :

ch = alphabets [i]

if string.count(ch) > 0 :

found = found+1

if found == 26 :

print("Pangram")

else:

print("Not a Pangram")

'''

#6 Write a program using a for loop to print all twin primes between 1 and 100. (Twin primes: pairs of prime numbers with a difference of 2, e.g., (3,5), (11,13)).

'''

for num in range(2, 99) :

for i in range(2, num) :

if num % i == 0 :

break

else :

twin = num + 2

for j in range(2, twin) :

if twin % j == 0:

break

else:

print(num,twin)

'''

#7 Write a program that accepts a number from the user and prints whether it is a Harshad number (number divisible by the sum of its digits) using a for loop.

'''

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

temp = num

sumd = 0

for digit in str(temp) :

sumd += int(digit)

if num % sumd == 0 :

print(num, "Harshad number")

else :

print(num, "Not Harshad number")

'''