**CONDITIONAL STATEMENTS AND LOOPS TASK**

1. **Leap Year Checker:** Write a Python program that checks if a given year is a leap year.  
   def isleapyear(year):

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

return True

else:

return False

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

if isleapyear(year):

print(f"{year} is a leap year")

else:

print(f"{year} is not a leap year")

1. **Grade Calculator:** Write a program that converts a score (0-100) into a corresponding letter grade (A, B, C, D, F).  
   def gradeScore(score):

if 90<=score<=100:

return "A"

elif 80<=score<=90:

return "B"

elif 70<=score<=80:

return "C"

elif 60<=score<=70:

return "D"

else:

return "F"

score=float(input("Enter a score between 0 to 100"))

if 0<=score<=100:

grade=gradeScore(score)

print(f"Your grade is {grade}")

else:

print("Invalid score")

1. **Temperature Conversion:** Write a Python program that converts a temperature from Fahrenheit to Celsius or vice versa, based on user input.  
   def cel\_to\_fah(cel):

return(cel\*9/5)+32

def fah\_to\_cel(fah):

return(fah-32)\*5/9

choice=input("Convert from cel or fah? ")

if choice=='cel':

cel=float(input("Enter temperature in Cel"))

fah=cel\_to\_fah(cel)

print(f"{cel}°C is equal to {fah:.2f}°F")

elif choice=='fah':

fah=float(input("Enter temperature in Fah"))

cel=fah\_to\_cel(fah)

print(f"{fah}°F is equal to {cel:.2f}°C")

else:

print("Invalid choice! Please enter 'Cel' or 'Fah'.")

1. **Triangle Type Checker:** Write a Python program that determines whether a triangle is equilateral, isosceles, or scalene based on its side lengths.  
   def triangle\_type(a,b,c):

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

if a==b==c:

return "Equilateral"

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

return "Isosceles"

else:

return "Scalene"

else:

return "Not a valid triangle"

a=float(input("Enter the length of side 1"))

b=float(input("Enter the length of side 2"))

c=float(input("Enter the length of side 3"))

triangle=triangle\_type(a,b,c)

print(f"The triangle is {triangle}")

1. **Password Strength Checker:** Write a Python program that evaluates the strength of a password based on its length and character composition. The program should categorize the password as "Weak", "Moderate", or "Strong".  
   import re

def check\_password\_strength(password):

if len(password)<6:

return "Weak"

elif len(password)>=6 and not re.search(r"[A-Z]", password) or not re.search(r"[0-9]", password) or not re.search(r"[!@#$%^&\*(),.?\":{}|<>]", password):

return "Moderate"

elif len(password)>=8 and re.search(r"[A-Z]", password) and re.search(r"[a-z]", password) and re.search(r"[0-9]", password) and re.search(r"[!@#$%^&\*(),.?\":{}|<>]", password):

return "Strong"

else:

return "Moderate"

password=input("Enter your password: ")

strength=check\_password\_strength(password)

print(f"Password strength is {strength}")

1. Factorial Calculation: Write a Python program to calculate the factorial of a given number using a for loop.  
   num = int(input("Enter a number"))

factorial=1

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

factorial\*=i

print(f"{num}!={factorial}")

1. Multiplication Table: Write a Python program that prints the multiplication table for a given number up to 10.  
   x=int(input("Enter a number"))

for i in range(1,11):

print(f"{x}\*{i}={x\*i}")

1. Reversing a String: Write a Python program that takes a string as input and prints the reversed string using a for loop.  
   x=input("Enter a string")  
   reversedStr=""  
   for i in range(len(x)-1,-1,-1):

reversedStr+=x[i]

print(reversedStr)

1. Count Vowels in a String: Write a Python program that counts the number of vowels in a given string using a for loop  
   a=input("Enter a string")

vowelCount=0

vowels="aeiouAEIOU"

for char in a:

if char in vowels:

vowelCount+=1

print("VowelCount",vowelCount)

1. Pattern Printing: Write a Python program that prints a pattern of stars (\*) in the following format for a given n:

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

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

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

print("\*" \* i)

11 . Consider the dictionary

marks\_dict = {

"Mathematics": 95,

"English": 88,

"Science": 92,

"History": 85,

"Geography": 90

}

Write a program to find total marks  
marks\_dict = {  
 "Mathematics": 95,  
 "English": 88,  
 "Science": 92,  
 "History": 85,  
 "Geography": 90  
}  
totalScore=sum(marks\_dict.values())  
print(totalScore)