Saumya Deep

In [1]:
```python
#1.Program to check if a given number is positive, negative, or zero
n = int(input("Enter a number: "))
if n>0:
    print(n, "is a positive number.")
elif n<0:
    print(n, "is a negative number.")
else:
    print("Entered number is zero.")
```

```
Enter a number: 8
8 is a positive number.
```

In [2]:
```python
#2.Program to find the largest among three numbers
n1 = int(input("Enter first number: "))
n2 = int(input("Enter second number: "))
n3 = int(input("Enter third number: "))
if n1==n2 and n2==n3:
    print("All entered numbers are same.\nPlease enter different numbers for comparison.")
elif n1>n2:
    if n1>n3:
        print("Largest number is", n1)
    else:
        print("Largest number is", n3)
else:
    if n2>n3:
        print("Largest number is", n2)
    else:
        print("Largest number is", n3)
```

```
Enter first number: 14
Enter second number: 6
Enter third number: 11
Largest number is 14
```

In [3]:
```python
#3.Program to check whether a given year is a leap year or not
year = int(input("Enter an year: "))
if year%400==0:
    print(year, "is a leap year.")
elif year%4==0 and year%100!=0:
    print(year, "is a leap year.")
else:
    print(year, "is not a leap year.")
```

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```
Enter an year: 2024
2024 is a leap year.
```

In [4]:
```python
#4.Program to check whether a given number is a prime number or not
n = int(input("Enter a number: "))
count = 0
for i in range(1,n+1):
    if n%i==0:
        count += 1
if count==2:
    print(n, "is a prime number.")
else:
    print(n, "is not a prime number.")
```

```
Enter a number: 7
7 is a prime number.
```

In [5]:
```python
#5.Program to create a grading system where the user inputs marks and the program assigns grades (A,B,C,D,F)
marks = float(input("Enter your marks: "))
if marks>=90 and marks<=100:
    print("Grade: A")
elif marks>=75 and marks<90:
    print("Grade: B")
elif marks>=60 and marks<75:
    print("Grade: C")
elif marks>=40 and marks<60:
    print("Grade: D")
else:
    print("Grade: F")
```

```
Enter your marks: 87.5
Grade: B
```

In [6]:
```python
#6.Program to check if the given three angles form a valid triangle
a = int(input("Enter first angle: "))
b = int(input("Enter second angle: "))
c = int(input("Enter third angle: "))
if a+b+c==180 and a>0 and b>0 and c>0:
    print("The given angles will form a valid Triangle.")
else:
    print("The given angles will not form a valid Triangle.")
```

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```
Enter first angle: 60
Enter second angle: 90
Enter third angle: 30
The given angles will form a valid Triangle.
```

In [7]:
```python
#7.Program to check if a given number is a perfect number
num = int(input("Enter a number: "))
sum = 0
for i in range(1,(num//2)+1):
    if num%i==0:
        sum += i
if num==sum:
    print(num, "is a perfect number.")
else:
    print(num, "is not a perfect number.")
```

```
Enter a number: 28
28 is a perfect number.
```

In [8]:
```python
#8.Program to determine if a character is a vowel or a consonant
char = input("Enter a character: ")
li = ['a','A','e','E','i','I','o','O','u','U']
if char.isalpha() and len(char)==1:
    if char in li:
        print(char, "is a vowel.")
    else:
        print(char, "is a consonant.")
else:
    print("Please enter a single alphabet to check vowel or consonant.")
```

```
Enter a character: A
A is a vowel.
```

In [9]:
```python
#9.Program to check whether the given integer is even or odd without using the modulus (%) operator
n = int(input("Enter a number: "))
if (n//2)*2==n:
    print(n, "is an even number.")
else:
    print(n, "is an odd number.")
```

```
Enter a number: 10
10 is an even number.
```

In [10]:
```python
#10.Program to print all numbers from 1 to 50
print("Numbers from 1 to 50:")
```

```
for i in range(1,51):
    print(i,end=" ")
```

```
Numbers from 1 to 50:
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46
47 48 49 50
```

In [11]:
```
#11.Program to print the multiplication table of a number
num = int(input("Enter a number: "))
print("Multiplication Table of", num)
for i in range(1,11):
    print(num,"x",i,"=",num*i)
```

```
Enter a number: 13
Multiplication Table of 13
13 x 1 = 13
13 x 2 = 26
13 x 3 = 39
13 x 4 = 52
13 x 5 = 65
13 x 6 = 78
13 x 7 = 91
13 x 8 = 104
13 x 9 = 117
13 x 10 = 130
```

In [12]:
```
#12.Program to find the factorial of a given number
num = int(input("Enter a number: "))
fact = 1
for i in range(1,num+1):
    fact *= i
print("Factorial of",num,"is",fact)
```

```
Enter a number: 5
Factorial of 5 is 120
```

In [13]:
```
#13.Program to print the Fibonacci series up to n terms
term = int(input("Enter the number of terms: "))
a = 0
b = 1
sum = 0
print("Fibonacci Series:\n",a,b,end=" ")
for i in range(3,term+1):
    sum = a+b
    print(sum,end=" ")
```

```
    a = b
    b = sum
```

```
Enter the number of terms: 10
Fibonacci Series:
 0 1 1 2 3 5 8 13 21 34
```

In [14]:
```
#14.Program to find the sum of all even numbers from 1 to 100
sum = 0
for i in range(1,101):
    if i%2==0:
        sum += i
print("Sum of all even numbers from 1 to 100 is",sum)
```

```
Sum of all even numbers from 1 to 100 is 2550
```

In [15]:
```
#15.Program to find the sum of digits of a given number
num = int(input("Enter a number: "))
n = num
sum = 0
while num>0:
    rem = num%10
    sum += rem
    num = num//10
print("Sum of digits of",n,"is",sum)
```

```
Enter a number: 1340
Sum of digits of 1340 is 8
```

In [16]:
```
#16.Program to reverse a given number using a while loop
n = int(input("Enter a number: "))
num = n
rev = ""
while num>0:
    rem = num%10
    rev += str(rem)
    num = num//10
print("Reverse of",n,"is",rev)
```

```
Enter a number: 6104
Reverse of 6104 is 4016
```

In [17]:
```
#17.Program to count the number of digits in an integer
n = int(input("Enter a number: "))
num = n
```

```
count = 0
while num>0:
    rem = num%10
    count += 1
    num //= 10
print("Number of digits in",n,"is",count)
```

```
Enter a number: 84136
Number of digits in 84136 is 5
```

In [18]:
```
#18.Program to check whether a given number is a palindrome
n = input("Enter a number: ")
rev = ""
i = len(n) - 1
while i >= 0:
    rev += n[i]
    i -= 1
if n==rev:
    print(n,"is a palindrome number.")
else:
    print(n,"is not a palindrome number.")
```

```
Enter a number: 1001
1001 is a palindrome number.
```

In [18]:
```
#19.Program to find the greatest common divisor (GCD) of two numbers using a while loop
num1 = int(input("Enter first number: "))
num2 = int(input("Enter second number: "))
n1 = num1
n2 = num2
while n2!=0:
    temp = n2
    n2 = n1%n2
    n1 = temp
print("GCD of",num1,"&",num2,"is",n1)
```

```
Enter first number: 12
Enter second number: 64
GCD of 12 & 64 is 4
```

In [20]:
```
#20.Program to print numbers from 1 to 20 but skip multiples of 5
print("Following are the numbers from 1 to 20 skippping multiple of 5.")
for i in range(1,21):
    if i%5==0:
```

```
        continue
    print(i,end=" ")
```

```
Following are the numbers from 1 to 20 skippping multiple of 5.
1 2 3 4 6 7 8 9 11 12 13 14 16 17 18 19
```

In [21]:
```
#21.Program to print numbers from 1 to 10, but stop the loop when the number reaches 7
for i in range(1,11):
    print(i,end=" ")
    if i==7:
        break
```

```
1 2 3 4 5 6 7
```

In [22]:
```
#22.Program to find the first 5 numbers that are divisible by both 3 and 5, using a loop and break statement
print("Following are the first 5 numbers that are divisible by both 3 & 5:")
i = 1
count = 0
while True:
    if count==5:
        break
    if i%3==0 and i%5==0:
        print(i,end=" ")
        count += 1
    i += 1
```

```
Following are the first 5 numbers that are divisible by both 3 & 5:
15 30 45 60 75
```

In [23]:
```
#23.Program to keep asking the user for input until they enter a number greater than 100
num = int(input("Enter a number: "))
if num>100:
    print("Entered number is",num)
else:
    while True:
        print("Invalid!")
        num = int(input("Enter a number: "))
        if num>100:
            print("Entered number is", num)
            break
```

```
Enter a number: 12
Invalid!
Enter a number: 34
Invalid!
Enter a number: 54
Invalid!
Enter a number: 123
Entered number is 123
```

In [24]:
```python
#24.Program to print all prime numbers between 1 and 100 using a loop
print("Following are the prime numbers between 1 to 100:")
for i in range(1,101):
    count = 0
    for j in range(1,i+1):
        if i%j==0:
            count += 1
    if count==2:
        print(i,end=" ")
```

```
Following are the prime numbers between 1 to 100:
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97
```

In [25]:
```python
#25.Program to generate and print all prime factors of a given number
num = int(input("Enter a number: "))
print("Follwoing are the prime factors of",num,":")
for i in range(1,num+1):
    count = 0
    if num%i==0:
        for j in range(1,i+1):
            if i%j==0:
                count += 1
        if count==2:
            print(i,end=" ")
```

```
Enter a number: 45
Follwoing are the prime factors of 45 :
3 5
```