In [1]:
```python
#Q1)Write a Python Program to Check if a Number is Positive, Negative or Zero?
```

In [6]:
```python
def number(a):
    try:
        num = int(a)
        if num>0:
            print("the given number is a positive number")
        elif num<0:
            print("The given number is a negative number")
        else:
            print("The given is zero")
    except Exception as e:
        print(e)
```

In [7]:
```python
#Case1: a>0:
a= input("enter a number")
number(a)
```
```
enter a number2
the given number is a positive number
```

In [8]:
```python
#case2 a=0:
a= input("enter a number")
number(a)
```
```
enter a number0
The given is zero
```

In [9]:
```python
#case3: a<0:
a= input("enter a number")
number(a)
```
```
enter a number-1
The given number is a negative number
```

In [ ]:

In [10]:
```python
#Q3)Write a Python Program to Check if a Number is Odd or Even?
```

In [12]:
```python
def even_or_odd(num):
    try:
        if int(num)%2 ==0:#condition to check even number
            print("The given number is an even number!!")
        else:
            print("The given number is an odd number!!")
    except Exception as e:
        print(e)
```

In [13]:
```python
#case1: when even number is given:
num = input("Enter a value")
even_or_odd(num)
```
```
Enter a value28
The given number is an even number!!
```

In [14]:
```python
#case2: when an odd number is given:
num = input("Enter a value")
even_or_odd(num)
```
```
Enter a value27
The given number is an odd number!!
```

In [ ]:

In [15]:
```python
#Q3)Write a Python Program to Check Leap Year?
```

In [16]:
```python
def leap_year(year):
    try:
        year = int(year)
        if (year%4==0):
            if(year%100==0):
                if(year%400==0):
                    print("The given year is a leap year")
                else:
                    print("The given year is not a leap year")
            else:
                print("The given year is a leap year")
        else:
            print("The given year is not a leap year")


    except Exception as e:
        print(e)
```

In [17]:
```python
#case1: if leap year is given
year = input("Enter a  year to check leap year or not !!")
leap_year(year)
```
```
Enter a  year to check leap year or not !!2004
The given year is a leap year
```

In [19]:
```python
#case2: if it is not a leap year
year = input("Enter a  year to check leap year or not !!")
leap_year(year)
```
```
Enter a  year to check leap year or not !!2021
The given year is not a leap year
```

In [ ]:

In [20]:
```python
#Q4)Write a Python Program to Check Prime Number?
```

In [26]:
```python
def prime_number(num):
    try:
        num = int(num)
        k=0
        for i in range(1,num):
            if(num%i==0):
                k = k+1
                if(k>1):
                    print("It is not a prime number!")
                    break


        if (k==1):
            print("The given number is an prime number")

    except Exception as e:
        print(e)
```

In [31]:
```python
#Case1:  if prime number is given:
num = input("Enter the number")
prime_number(num)
```
```
Enter the number23
The given number is an prime number
```

In [32]:
```python
#Case2: if prime number is not given:
num = input("Enter the number")
prime_number(num)
```
```
Enter the number1000000
It is not a prime number!
```

In [ ]:

In [33]:
```python
#Q5)Write a Python Program to Print all Prime Numbers in an Interval of 1-10000?
```

In [38]:
```python
l = []
for i in range(1,10000):
    k=0
    for j in range(1,i):
        if(i%j==0):
            k = k+1
            if(k>1):
                break
    if(k==1):
        l.append(i)

print(l)
```
```
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```

In [ ]: