

What is difference between errors and Exception in Python?

Errors are the event that occurs during the execution of the program that disrupts the flow of the program. There are two types of errors: 1. Syntax error 2. Logical error/Exception

Syntax error

These errors occur when the programmer/developer writes the syntax code of the programming language. Below is the example of syntax error.

```
In [2]: num = 1000

if num > 2000
    print("Number is greater than 2000")
else:
    print("Number is less than equal to 2000")
```

```
Cell In[2], line 3
      if num > 2000
          ^
SyntaxError: expected ':'
```

In the above example we can see that since we haven't inserted `:` in our code and hence the interpreter has thrown a syntax error and pointing it out where it occurred.

Logical errors/Exception

These errors occur during the runtime of the program even though it is syntactically correct. There are various logical errors such as: 1. NameError 2. ValueError 3. EOFError 4. ZeroDivisionError and many more.

NameError

```
In [7]: if n == 1:
        print("True")
else:
        print("False")
```

```
-----
NameError                                Traceback (most recent call last)
Cell In[7], line 1
----> 1 if n == 1:
      2     print("True")
      3 else:

NameError: name 'n' is not defined
```

ValueError

```
In [10]: n = int(input("Enter a number: "))
```

Enter a number: one

Loading [MathJax]/extensions/Safe.js

```
-----  
ValueError                                Traceback (most recent call last)  
Cell In[10], line 1  
----> 1 n = int(input("Enter a number: "))  
  
ValueError: invalid literal for int() with base 10: 'one'
```

ZeroDivisionError

```
In [11]: n = 100  
  
number = n / 0  
  
print(n)
```

```
-----  
ZeroDivisionError                        Traceback (most recent call last)  
Cell In[11], line 3  
      1 n = 100  
----> 3 number = n / 0  
      5 print(n)  
  
ZeroDivisionError: division by zero
```

As we can see in the above example that since error occurred our rest part of the program isn't executed since our program was interrupted because of error. To handle these error we use exceptions.

```
In [ ]:
```