# Chapter -12
# Advanced Python1

## Exception Handling in Python

There are many built-in exceptions which are raised in Python when something goes wrong. Exception in python can be handled using a try statement. The code that handles the exception is written in the except clause.

```
try:
    #code                    → code which might
except Exception as e:         throw exception
    print(e)
```

When the exception is handled, the code flow continues without program interruption.

We can also specify the exception to catch like below:

```
try:
    #code
except ZeroDivisionError:
    #code
except TypeError:
    #code
except:
    #code    → All other exception are
               handled here.
```

## Raising Exceptions

We can raise custom exceptions using the raise keyword in python.

## try with else clause

Sometimes we want to run a piece of code when try was successful.

```
try:
    #code
except:
    #code
else:
    # code
```

→ This is executed only if the try was successful.

## try with finally

Python offers a finally clause which ensures execution of a piece of code irrespective of the exception.

```
try:
    #some code
except:
    #some code
finally:
    #some code
```

→ executed regardless of error!

## if __name__ == '__main__' in Python

__name__ evaluates to the name of the module in python from where the program is ran

If the module is being run directly from the command line, the __name__ is set to string "__main__". Thus this behaviour is used to check whether the module is run directly or imported to another file.

## The Global Keyword

Global keyword is used to modify the variable outside of the current scope.

## Enumerate function in Python

The enumerate function adds counter to an iterable and returns it.

```
for i, item in list1:
    print(i, item)
```

↳ prints the items of list1 with index!

## List Comprehensions

List comprehensions is an elegant way to create lists based on existing lists

```
list1 = [1, 7, 12, 11, 22]

list2 = [i, for item in list1 if item > 8]
```

# Chapter - 12
## Practice Set

Que 1. Write a program to open three files 1.txt, 2.txt and 3.txt. If any of these files are not present, a message without exiting the program must be printed prompting the same.

Que 2. Write a program to print third, fifth and seventh element from a list using enumerate function.

Que 3. Write a list comprehension to print a list which contains the multiplication table of a user entered number.

Que 4. Write a program to display a/b where a and b are integers. If b=0, display Infinite by handling the zeroDivisionerror.

Que 5. Store the multiplication tables generated in Problem 3 in a file named Tables.txt.