EdYoda Digital University

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- Exception Handling

Exception Handling

- Error in Python can be of two types i.e. Syntax errors and Exceptions.
- Errors are the problems in a program due to which the program will stop the execution.
- On the other hand, exceptions are raised when some internal events occur which changes the normal flow of the program.
- **Syntax Error:** As the name suggests this error is caused by the wrong syntax in the code. It leads to the termination of the program.

Exception Handling

- **Exceptions:**Exceptions are raised when the program is syntactically correct, but the code resulted in an error.
- This error does not stop the execution of the program, however, it changes the normal flow of the program.
- In the above example raised the ZeroDivisionError as we are trying to divide a number by 0.
- **Note:** Exception is the base class for all the exceptions in Python

Exception Handling

Exception	Description
IndexError	When the wrong index of a list is retrieved.
AssertionError	It occurs when the assert statement fails
AttributeError	It occurs when an attribute assignment is failed.
ImportError	It occurs when an imported module is not found.
KeyError	It occurs when the key of the dictionary is not found.
NameError	It occurs when the variable is not defined.
TypeError	It occurs when a function and operation are applied in an incorrect type.

Exception Handling

Try and Except Statement – Catching Exceptions

- Try and except statements are used to catch and handle exceptions in Python.
- Statements that can raise exceptions are kept inside the try clause and the statements that handle the exception are written inside except clause.

Exception Handling

Catching Specific Exception

A try statement can have more than one except clause, to specify handlers for different exceptions. Please note that at most one handler will be executed. For example, we can add IndexError in the above code. The general syntax for adding specific exceptions are –

```
try:
    # statement(s)
except IndexError:
    # statement(s)
except ValueError:
    # statement(s)
```

Exception Handling

Try with Else Clause

In python, you can also use the else clause on the try-except block which must be present after all the except clauses. The code enters the else block only if the try clause does not raise an exception.

Exception Handling

Finally Keyword in Python

Python provides a keyword finally, which is always executed after the try and except blocks.

The final block always executes after normal termination of try block or after try block terminates due to some exception.

Exception Handling

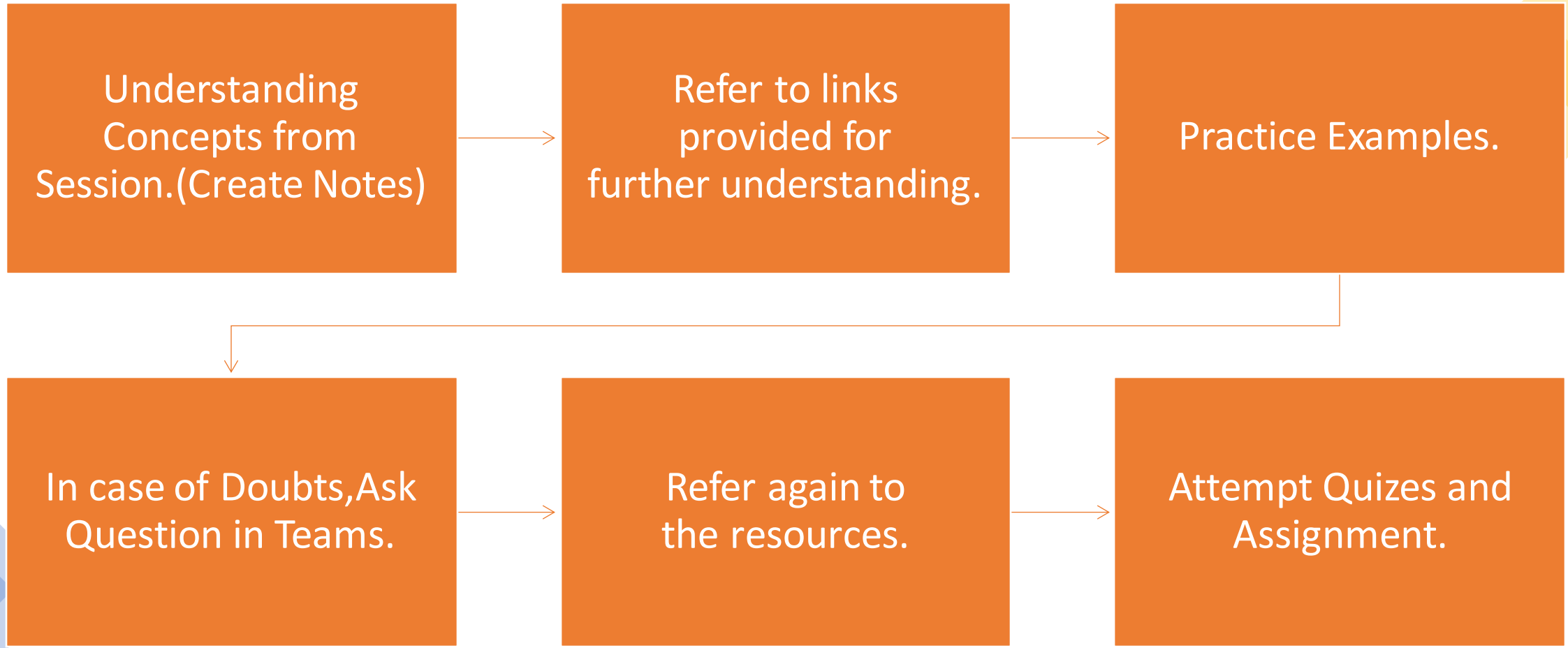
```
try:
    # Some Code....
except:
    #   optional   block
    # Handling of exception (if required)
else:
    # execute if no exception
finally:
    #  Some  code  .....(always executed)
```

Exception Handling

Raising Exception

- The raise statement allows the programmer to force a specific exception to occur.
- The sole argument in raise indicates the exception to be raised.
- This must be either an exception instance or an exception class (a class that derives from Exception).

Approach to learning Python



Anyone ??