



Eduva Tech

# CORE PYTHON SYLLABUS

**Prepared For :**  
Eduva Tech

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# Python



# Course Outline

## – INTRODUCTION TO PYTHON

- WHY PYTHON?
- PYTHON PROGRAM COMPARISON.
- ADVANTAGES OF PYTHON
- HISTORY OF PYTHON
- INSTALLING PYTHON
- IDLE
- HOW TO EXECUTE A PYTHON PROGRAM USING IDLE

## **PYTHON FUNDAMENTALS**

- PYTHON TOKENS
- PYTHON KEYWORDS
- PYTHON IDENTIFIERS, LITERALS, OPERATORS
- VARIABLES AND ASSIGNMENTS
- INPUT AND OUTPUT IN PYTHON

## **DATA HANDLING**

- DATA TYPES
- NUMBERS
- STRINGS
- LISTS
- TUPLES
- DICTIONARY
- SET
- FROZENSET
- BOOL
- MUTABLE AND IMMUTABLE
- TYPES CASTING



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## **STRING MANIPULATION**

- INTRODUCTION TO PYTHON STRING
- ACCESSING INDIVIDUAL ELEMENTS
- STRING OPERATORS
- STRING SLICES
- STRING FUNCTIONS AND METHODS

## **LIST MANIPULATION**

- INTRODUCTION TO PYTHON LIST
- CREATING LIST
- ACCESSING LIST
- JOINING LIST
- REPLICATING LIST
- LIST SLICING

## **TUPLES**

- INTRODUCTION TO TUPLE
- CREATING TUPLES
- ACCESSING TUPLES
- JOINING TUPLES
- REPLICATING TUPLES
- TUPLE SLICING

## **DICTIONARIES**

- INTRODUCTION TO DICTIONARY
- ACCESSING VALUES IN DICTIONARIES
- WORKING WITH DICTIONARIES
- PROPERTIES



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## **SET AND FROZENSET**

- INTRODUCTION TO SET AND FROZENSET
- CREATING SET AND FROZENSET
- ACCESSING AND JOINING
- REPLICATING AND SLICING

## **OPERATORS**

- ARITHMETIC OPERATORS
- RELATIONAL OPERATORS
- LOGICAL OPERATORS
- MEMBERSHIP OPERATORS
- IDENTITY OPERATORS
- BITWISE OPERATORS
- ASSIGNMENT OPERATORS
- OPERATORS PRECEDENCE
- EVALUATING EXPRESSION

## **PROGRAM CONTROL FLOW**

- CONDITIONAL STATEMENTS
- THE IF STATEMENT
- THE IF-ELSE STATEMENT
- THE IF-ELIF STATEMENT
- NESTED IF STATEMENTS
- PYTHON INDENTATION
- LOOPING AND ITERATION
- THE FOR LOOP
- THE WHILE LOOP
- LOOP ELSE STATEMENT
- NESTED LOOPS



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- BREAK AND CONTINUE
- THE RANGE FUNCTION
- INTRODUCTION TO RANGE()
- TYPES OF RANGE() FUNCTION
- USE OF RANGE() FUNCTION

## **INTRODUCTION TO FUNCTIONS**

- BUILT-IN FUNCTIONS
- INTRODUCTION TO FUNCTIONS
- USING A FUNCTIONS
- PYTHON FUNCTION TYPES
- STRUCTURE OF PYTHON FUNCTIONS
- E.G. - MAP, ZIP, REDUCE, FILTER, ANY, CHR, ORD, SORTED, GLOBALS, LOCALS, ALL, ETC.
- USER DEFINED FUNCTIONS
- STRUCTURE OF A PYTHON PROGRAM
- W.R.T. UDF
- TYPES OF FUNCTIONS
- INVOKING UDF
- FLOW OF EXECUTION
- ARGUMENTS AND PARAMETERS
- DEFAULT ARGUMENTS, NAMED ARGUMENTS
- SCOPE OF VARIABLES
- LAMBDA FUNCTION
- RECURSION FUNCTION
- USE OF RECURSION FUNCTION



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## MODULES AND PACKAGES

- BUILT-IN MODULES
- IMPORTING MODULES IN PYTHON PROGRAMS
- WORKING WITH RANDOM MODULES
- E.G. - BUILTINS, OS, TIME, DATETIME, CALENDAR, SYS, ETC.
- USER-DEFINED MODULES
- STRUCTURE OF PYTHON MODULES

## FILE OPERATIONS

- TEXT AND BYTES FILES
- OPENING A FILE
- READING AND WRITING FILES
- OTHER FILE TOOLS
- MS EXCEL FILES
- INTRODUCTION TO MS EXCEL FILES

## REGULAR EXPRESSIONS

- MATCH FUNCTION
- SEARCH FUNCTION
- GROUPING
- MATCHING AT BEGINNING OR END
- MATCH OBJECTS
- FLAGS



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## EXCEPTION HANDLING

- DEFAULT EXCEPTION AND ERRORS
- CATCHING EXCEPTIONS
- RAISE AN EXCEPTION
- TRY.... EXCEPT STATEMENT
- RAISE, ASSERT, FINALLY BLOCKS
- USER-DEFINED EXCEPTION

## CLASSES AND OBJECTS

- CLASSES AS USER-DEFINED DATA TYPE
- OBJECTS AS INSTANCES OF CLASSES
- CREATING CLASS AND OBJECTS
- CREATING OBJECTS BY PASSING VALUES
- VARIABLES & METHODS IN A CLASS



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