

## ❖ OVERVIEW

- WHAT IS PYTHON
- PYTHON SYNTAX COMPARED TOO THE PROGRAMMING LANGUAGES
- PROGRAM STRUCTURE

## ❖ STAGE-1

- INSTALLATION
- WHAT IS AN INTERPRETER?
- INTERPRETERS' VS COMPILERS
- WORKING ENVIRONMENTS
- PYTHON IDLE
- RUNNING PYTHON FILES
- WORKING WITH PYTHON SHELL
- PYCHARM PROFESSIONAL OR COMMUNITY
- LIFE CYCLE OF PYTHON

## ❖ STAGE-2

- WHAT IS VARIABLES?
- HOW TO CREATE IN VARIABLE?
  - SYNTAX
  - IDENTIFIER
  - ACCESSING VALUES IN VARIABLE
- WHAT IS STRING?
- HOW TO CREATE IN STRING?
  - SYNTAX
  - IDENTIFIER
- ACCESSING VALUES IN STRINGS
- DATA TYPE
- NUMBERS
- COMPLEX
- BOOLEAN
- OPERATORS IN PYTHON
- TYPES OF OPERATOR
  - PYTHON ARITHMETIC OPERATORS
  - PYTHON ASSIGNMENT OPERATORS
  - PYTHON COMPARISON OPERATORS
  - PYTHON LOGICAL OPERATORS
  - PYTHON IDENTITY OPERATORS (IS, IS NOT)
  - PYTHON MEMBERSHIP OPERATORS (IN, NOT IN)

### ❖ STAGE-3

- CONTROL STRUCTURES
  - IF STATEMENT
  - IF - ELSE
  - IF - ELIF – ELSE
  - NESTED IF ELSE STATEMENTS
  - BREAK STATEMENT
  - CONTINUE STATEMENT
  - PASS STATEMENT
  - EVEN OR ODD NUMBER
  - POSITIVE OR NEGATIVE NUMBER
  - CHECK WHETHER A CHARACTER IS A VOWEL OR CONSONANT

### ❖ STAGE-4

- LOOP AND DECISION MAKING
  - WHAT IS WHILE?
  - WHILE LOOP
  - FOR LOOP
  - SUM OF DIGITS OF A NUMBER

### ❖ STAGE-5

- WHAT IS ARRAY?
  - WHAT IS LIST
  - WHAT IS TUPLE
  - WHAT IS SET
  - WHAT IS DICTIONARY

### ❖ STAGE-6

- LIST
  - HOW TO CREATE LIST?
  - ACCESSING ELEMENTS FROM LIST
  - LIST OF INTEGERS
  - LIST INDEX
  - LIST SLICING
  - SIZE OF LIST
  - BASIC LIST OPERATIONS
  - MULTI-DIMENSIONAL LIST
  - LIST METHODS(KEYS)

- **TUPLE**

- HOW TO CREATE TUPLE
- ACCESSING ELEMENTS FROM TUPLE
- UNPACK TUPLE ELEMENTS
- UPDATE TUPLE ELEMENTS
- DELETE TUPLE ELEMENTS

- **SETS**

- HOW TO CREATE SETS
- ACCESSING ELEMENTS FROM SETS
- JOIN SETS
- UPDATE SETS ELEMENTS
- DELETE SETS ELEMENTS
- MODIFYING A SETS ELEMENTS
- SETS METHODS (KEYS)

- **DICTIONARY**

- HOW TO CREATE DICTIONARY
- ACCESSING ELEMENTS FROM DICTIONARY
- DICTIONARY COMPREHENSION
- ADDING DICTIONARY ELEMENTS
- DICTIONARY BUILT-IN FUNCTIONS
- DICTIONARY METHODS (KEYS)

❖ **STAGE-7**

- **FUNCTION**

WHAT IS FUNCTION?

- HOW TO CREATE FUNCTION
- SYNTAX
- CREATE A FUNCTION
- CALLING A FUNCTION
- FUNCTION ARGUMENT
- FUNCTION ARGUMENT WITH DEFAULT VALUES
- FUNCTION KEYWORD ARGUMENT
- RETURN STATEMENT FUNCTION
- CALCULATOR CREATE IN FUNCTION
- SIGNUP AND LOGIN CREATE IN FUNCTION

## ❖ STAGE-8

- OOPS CONCEPT

- CREATING CLASS IN PYTHON
- DOCUMENT STRING
- PRIVATE IDENTIFIER
- OBJECT
- POLYMORPHISM
- ENCAPSULATION
- INHERITANCE
- DATA ABSTRACTION

## ❖ STAGE-9

- SQL DATABASE

- WHAT IS SQL?
- INTRODUCTION
- SYNTAX
- CREATE DATABASE
- DROP DATABASE
- BACKUP DATABASE
- CREATE TABLE
- ALTER TABLE
- SELECT
- SELECT DISTINCT SYNTAX
- SELECT DISTINCT
- SELECT WHERE SYNTAX
- SELECT WHERE
- AND
- OR
- NOT
- ORDER BY
- INSERT INTO
- UPDATE
- DELETE
- MIN AND MAX
- COUNT
- AVG
- SUM
- JOIN
- INNER JOIN
- RIGHT JOIN
- LEFT JOIN
- FULL JOIN

## ❖ STEP-10

### • MYSQL WITH PYTHON

- ENVIRONMENT SETUP
- DATABASE CONNECTION
- CREATE NEW DATABASE
- CREATE TABLE
- INSERT OPERATION
- READ OPERATION
- UPDATE OPERATION
- DELETE OPERATION

## ❖ STAGE-11

- TYPES OF ERRORS
- EXCEPTION HANDLING

- WHAT IS TRY?
- TRY
- EXCEPTS OR EXCEPT EXCEPTION (E)
- ELSE
- FINALLY

## ❖ STAGE-12

- PROJECT-1
- USING THIS PROJECT IF-ELIF-ELSE, FOR LOOP, SQL, TRY, EXCEPT EXCEPTION(E), FINALLY
- CONVERTING IN EXE

## ❖ STAGE-13

### • MODULES AND PACKAGES

- FRAME WORK VS PACKAGES
- FOLIUM INTRODUCTION
- CREATING MODULES
- IMPORT STATEMENT
- FROM IMPORT STATEMENT
- FROM IMPORTSTATEMENT
- LOCATING MODULE

## ❖ STAGE-14

### • FILE MANIPULATION

- LIFE CYCLE
- HOW TO WRITE DATA?
- READ METHOD ()
- WRITE METHOD()
- CLOSE METHOD ()
- REMOVE METHOD ()

➤ ADVANCED PYTHON

❖ STAGE-15

• ITERATOR AND GENERATOR

- MAP
- LAMBDA
- FILTER
- GENERATORS & ITERATORS

❖ STAGE -16

• GUI -TKINTER

- WHAT IS TKINTER?
- CREATE A TEXTBOX
- CREATE A LABEL
- CREATE A RADIO BUTTON
- CREATE A CHECK BUTTON
- MENU BAR
- MESSAGE BOX
- TKINTER SCROLL
- TKINTER SCALE
- TKINTER DATE PICKER
- CREATING GUI APPLICATION
- CONNECTING WITH SQLITE

❖ STAGE -17

• PROJECT-2

- CREATE A TKINTER APP(WITH SQL)

❖ STAGE -18

• FAST API

- WHAT IS API?
- GET METHOD ()
- POST METHOD ()
- PUT METHOD ()
- DELETE METHOD ()

❖ STAGE- 19

• PROJECT-3

• FASTAPI

- CREATE A ECOMMERCE API  
(APPLICATION PROGRAMMING INTERFACE)

## ❖ STAGE – 20

## • NUMPY

- INTRODUCTION ABOUT NUMPY
- NUMPY PACKAGE CREATION
- ARRAY CONCEPTS
- NUMPY INDEXING SLICING
- NUMPY DATATYPES
- NUMPY SHAPE
- NUMPY RESHAPE
- NUMPY ITRATION
- NUMPY JOIN
- NUMPY SPLIT
- NUMPY SEARCH
- NUMPY SORT

## ❖ STAGE – 21

## • HTML

- HTML INTRODUCTION
- HTML BASIC
- HTML ELEMENTS
- HTML ATTRIBUTES
- HTML HEADING
- HTML PARAGRAPH
- HTML STYLE
- HTML FORMATTING
- HTML COMMENT TAG
- HTML COLOURS
- HTML LINKS
- HTML IMAGE
- HTML FAVICON
- HTML PAGE TITLE
- HTML TABLE
- HTML LIST
- HTML BLOCK AND INLINE
- HTML DIV
- HTML CLASS
- HTML ID
- HTML FRAME
- HTML JAVASCRIPT
- HTML FILE PATH
- HTML HEAD
- HTML LAYOUT
- HTML RESPONSIVE

- HTML COMPUTER CODE ELEMENT
- HTML SEMANTICS
- HTML ENTITIES
- HTML SYMBOLS
- HTML EMOJIS
- HTML CHARACTER SET
- HTML MEDIA
- HTML VIDEO
- HTML AUDIO
- HTML PLUG-IN
- CSS
  - CSS INTRODUCTION
  - CSS SYNTAX
  - CSS SELECTORS
  - CSS COMMENTS
  - CSS COLOR
  - CSS BACKGROUND
  - CSS BORDER
  - CSS MARGINS
  - CSS PADDING
  - CSS HEIGHT / WIDTH
  - CSS BOX MODEL
  - CSS OUTLINE
  - CSS TEXT
  - CSS FONTS
  - CSS ICONS
  - CSS LINKS
  - CSS LISTS
  - CSS TABLES
  - CSS DISPLAY
  - CSS MAX-WIDTH
  - CSS POSITION
  - Z-INDEX
  - CSS OVERFLOW
  - CSS FLOAT
  - CSS INLINE-BLOCK
  - CSS ALIGN
  - CSS NAVIGATION BAR
  - CSS DROPDOWN
  - CSS IMAGE GALLERY
  - CSS ATTRIBUTE
  - CSS FORMS



YALE IT  
*Skill Hub*

## ❖ CSS ADVANCE

- CSS ROUNDED CORNERS
- CSS BORDER IMAGES
- CSS BACKGROUNDS
- CSS COLOURS
- CSS COLOR KEYWORDS
- CSS GRADIENTS
- CSS SHADOWS
- CSS TEXT EFFECTS
- CSS WEB FONTS
- CSS 2D TRANSFORMS
- CSS 3D TRANSFORMS
- CSS TRANSFORMS
- CSS ANIMATIONS
- CSS TOOLTIPS
- CSS STYLE IMAGES
- CSS IMAGE REFLECTION
- CSS OBJECT-FIT
- CSS MASKING
- CSS BUTTONS
- CSS PAGINATION
- CSS MULTIPLE COLUMNS
- CSS USER INTERFACE
- CSS VARIABLES
- CSS BOX SIZING
- CSS MEDIA QUERIES
- CSS FLEXBOX

## ❖ BOOTSTRAP

- INTRODUCTION ABOUT BOOTSTRAP
- GRID BASICS
- BOOTSTRAP TABLES
- BOOTSTRAP IMAGES
- BOOTSTRAP BUTTONS
- BOOTSTRAP COLLAPSE
- BOOTSTRAP SPINNERS
- BOOTSTRAP JUMBOTRON
- BOOTSTRAP PROGRESS BAR
- BOOTSTRAP PAGINATIONS
- BOOTSTRAP ICONS
- BOOTSTRAP NAVIGATION BAR
- BOOTSTRAP DROPSHADOWS
- BOOTSTRAP FORMS
- BOOTSTRAP SLIDE
- BOOTSTRAP TOOLTIP

- BOOTSTRAP POPOVER
- BOOTSTRAP TOAST
- BOOTSTRAP SCROLLSPY

### ❖ JAVA SCRIPT

- JS INTRODUCTION
- JAVA SCRIPT OUTPUT
- JAVA SCRIPT STATEMENTS
- JAVA SCRIPT SYNTAX
- JAVA SCRIPT COMMENTS
- JAVA SCRIPT VARIABLES
- JAVA SCRIPT LE3T
- JAVA SCRIPT CONST
- JAVA SCRIPT OPERATOR
- JAVA SCRIPT DATA TYPES
- JAVA SCRIPT STRING
- JAVA SCRIPT S NUMBER
- JAVA SCRIPT S BIGINT
- JAVA SCRIPT BOOLEAN
- JAVA SCRIPT UNDEFINED
- JAVA SCRIPT NULL
- JAVA SCRIPT S SYMBOL
- JAVA SCRIPT S OBJECT
- JAVA SCRIPT FUNCTION
- JAVA SCRIPT OBJECT
- JAVA SCRIPT EVENT
- JAVA SCRIPT STRING METHODS
- JAVA SCRIPT STRING TEMPLATES
- JAVA SCRIPT NUMBER
- JAVA SCRIPT BEGIN
- JAVA SCRIPT NUMBER METHOD
- JAVA SCRIPT ARRAYS
- JAVA SCRIPT ARRAYS METHODS
- JAVA SCRIPT ARRAYS SORTS
- JAVA SCRIPT ARRAY COST
- JAVA SCRIPT SET METHODS
- JAVA SCRIPT RANDOM
- JAVA SCRIPT IF ELSE
- JAVA SCRIPT SWITCH
- JAVA SCRIPT LOOP FOR
- JAVA SCRIPT LOOP WHILE
- JAVA SCRIPT BREAK
- JAVA SCRIPT SETS
- JAVA SCRIPT TYPE OF

- JAVA SCRIPT SCOPE
- JAVA SCRIPT HOISTING
- JAVA SCRIPT STRICT
- JAVA SCRIPT THIS KEYWORDS
- JAVA SCRIPT ARROW FUNCTION
- JAVA SCRIPT MODULES
- JAVA SCRIPT JSON
- JAVA SCRIPT DEBUGGING
- JAVA SCRIPT STYLE GUIDE
- JAVA SCRIPT PERFORMANCE

❖ **JQUERY**

- JQUERY INTRODUCTION
- JQUERY SYNTAX
- JQUERY SELCTORS
- JQUERY CLASS SELECTORS
- JQUERY ID SELECTORS
- JQUERY EVENT HANDLER
- JQUERY SHOW AND HIDE CONCEPTS
- JQUERY FADE
- JQUERY ANIMATIONS

❖ **DJANGO FRAME WORK**

- INTRODUCTION TO DJANGO
  - FEATURES OF DJANGO
  - DJANGO WEB SERVER
  - UNDERSTANDING DJANGO ENVIRONMENT
  - A SIMPLE 'HELLO WORLD' APPLICATION
  - DJANGO ARCHITECTURE
  - MVC AND MTV
  - STARTING A PROJECT
  - DJANGO APPS
  - ACTIVATING OUR FIRST APP
  - A VIEW THAT DISPLAYS A HYPERLINK
  - MAPPING THE VIEWS TO URLs
  - RUNNING OUR FIRST APP
  - IMPROVING THE VIEWS USING TEMPLATES
  - THE IMPROVED TEMPLATES
  - TEMPLATE INHERITANCE
  - SENDING DATA FROM URL TO VIEW
  - SENDING DATA FROM VIEW TO TEMPLATE

## ❖ CREATING A WEBAPPLICATION

- STARTING A PROJECT
- CREATING AN APP INSIDE THE PROJECT
- ACTIVATING THE APP
- CREATING MODEL FOR OUR SITE
- CONVERTING THE MODEL INTO A TABLE
- EXAMPLES FOR FIELDS IN MODELS
- BASIC DATA ACCESS USING DJANGO SHELL
- SAVING OBJECTS INTO DATABASE
- RETRIEVING OBJECTS FROM DATABASE
- MODIFYING OBJECTS OF DATABASE
- SORTING OBJECTS
- FILTERING OBJECTS
- DELETING OBJECTS

## ❖ CREATING ADMINISTRATION PANEL

- USING THE ADMIN INTERFACE
- CUSTOMIZING THE ADMIN INTERFACE
- ADDING USERS
- DATA ACCESS AND MODIFICATION USING ADMIN PANEL
- GIVING PERMISSIONS TO USERS
- CREATING FIRST PAGE OF OUR SITE
- THE DJANGO TEMPLATE SYSTEM
- TEMPLATE INHERITANCE
- IMPROVING THE WEBSITE
- ADDING BACKGROUND COLOR FOR WEB PAGES
- ADDING BANNER TO THE WEB SITE
- ADDING BACKGROUND IMAGE IN THE WEB PAGES
- STORING AND DISPLAYING IMAGES
- ADDING USERS TO OUR SITE
- UPLOADING THE INFORMATION BY USER
- CHANGING THE ADMINISTRATION INTERFACE TITLE

## ❖ DJANGO TEMPLATE TAGS

- IF/ELSE
- IF/ELIF/ELSE
- FOR
- COMMENTS
- FILTERS
- USING TEMPLATES TO DISPLAY DATA IN THE SITE
- INTEGRATING BOOTSTRAP INTO DJANGO
- INTRODUCTION TO BOOTSTRAP
- CREATING TABLES
- USING OTHER DATABASES IN DJANGO
- USING SQLITE
- CONFIGURING MYSQL DATABASE
- WORKING WITH MYSQL IN DJANGO

- CONFIGURING ORACLE DATABASE
- WORKING WITH ORACLE IN DJANGO

- ❖ DJANGO RESTFUL API
  - CRUD OPERATIONS

