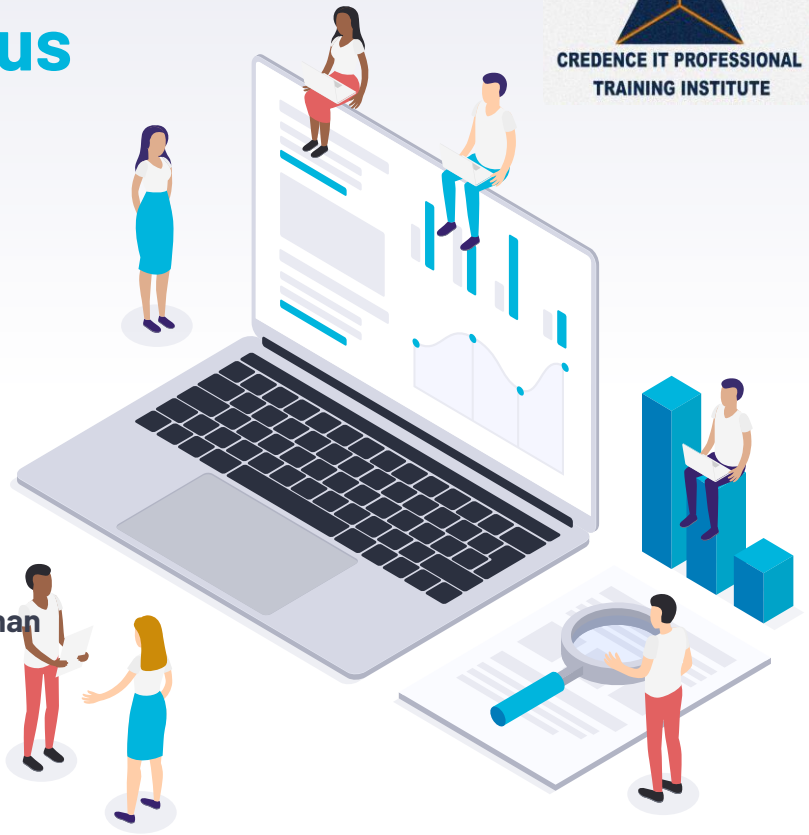
Python + Data Science Syllabus



Credence IT Professional Training Institute

Tushar Kathalkar/ Yusuf Tamboli

+918237916162 +917385318590

+919766722458 +918275219894

www.credence.in

Address : Indira Heights, Survey no. 34/5, Radhe Sham Building, Mohan Nagar, Dhankawadi, Pune, Maharashtra 411043

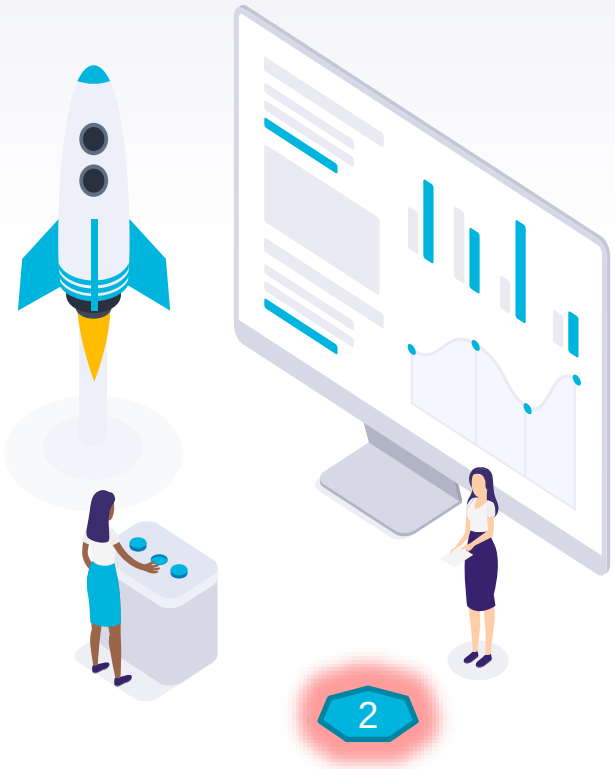
Python

1: Introduction to Python

- Installation and Working with Python
- Understanding Python variables
- Python basic Operators
- Understanding python blocks
- Type casting, Unicode etc.

2: Python Data Types

- Declaring and using Numeric data types: int, float, complex, bool
- Using string data type and string operations
- Defining list and list slicing
- Use of Tuple data type



Python

3: Python Program Flow Control

- Conditional blocks using if, else and elif
- Simple for loops in python
- For loop using ranges, string, list and dictionaries
- Use of while loops in python
- Loop manipulation using: pass, continue, break
- Programming using Python conditional and loops block

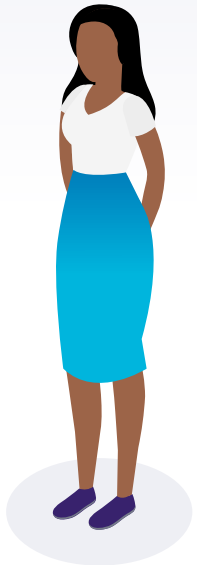
4: Python String, List, set and Dictionary Manipulations

- Building blocks of python programs
- Understanding string in build methods
- List manipulation using in build methods
- Tuple operation
- Set manipulation
- Dictionary manipulation

Python

5: Fundamentals of Object orientation:

- Class, Object
- Constructor
- Types of Variables
- Methods and its types
- Importing Class
- OOP's Concepts: Inheritance, Encapsulation, Abstraction, Polymorphism
- File handling: text, binary, csv
- Exception handling: try, except, else, finally



Data Science

6. Complete Data Science:

- NumPy: (Numerical Python)
- Introduction to Numpy
- Datatypes of ndarrays
- Dealing with ndarrays, copies and views
- Arithmetic operations,
- Indexing , Slicing, splitting arrays
- Shape manipulation
- Stacking together different data

7. Pandas: (Data Analysis)

- DataFrame and Series
- DataFrame operations
- Data Slicing, indexing
- DataFrame functions
- Reading the files- csv, excel
- Boolean filtering
- Storing file in various formats
- Useful DataFrame functions

Data Science

Pandas: (Data Analysis)

- Stats using pandas
- Dealing with missing data
- Operations over the data

Matplotlib (Data Visualization)

- Introduction to Matplotlib
- Simple plotting
- Formatting the graph: colors, markers, line style, etc
- Customization
- Plotting with list, arrays, pandas
- Types: scatter plot, bar chart, pie chart, histogram

Python Advance

- Modules
- File Handling
- Exception Handling
- Regular Expression
- Python OOPs Concepts
- Polymorphism
- Multi Threading
- Python Database programming

IDE

- Pycharm
- Eclips
- Atom

Django

- Introduction To Web Development &
- MVT vs MVC & Config with IDE(Pycharm & ATOM)
- Development of First Web Application
- Template & Static Files
- Working with Models and database
- Working with Django Forms
- Working with Django Model Forms
- Working with Django Model Forms

Django

- Working with Advance Template Features
- Session Management
- User Authentication and Authorization
- Class Based Views
- CRUD operations by using both CBVs and FBVs
- Django ORM
- Working with Advanced Model Concepts
- Woking with Django Middleware
- Deployment of our application in LIVE Environment
- REAL TIME PROJECT

Oddo

- Introduction Of Odoo
- Install odoo particular version in IDE(Eclips)
- How to Create Custom module(py with xml)
- How to create deferent type fields.
- How to define all type of View and act-window
- Set access right in odoo
- Inherit and add fields to existing views and models in Odoo

Oddo

- Model in works

a. Websites

- website builders
- E-Commerce
- Event
- Event management

b. Sales

- Sales
- CRM
- Invoicing
- Point of sale

c. Operation

- Accounting
- HR
- Inventory
- Purchases
- Manufacturing

SQL

- What is Data?
- What is Database?
- DBMS VS RDBMS?
- SQL statements
  I. DDL
  II. DML
  III. DCL
  IV. TCL

SQL

SQL Operators

- Arithmetic
- Comparison
- Logical
- Set
- Like
- Concatenation

SQL functions

- Aggregate
- Character
- Date
- Number

SQL constraints

- Primary key
- Unique
- Check
- Not null
- Default
- Foreign key
- Composite key

SQL

SQL joins

- Inner join
- Left outer
- Right outer
- Full outer
- Equi join
- Non equi join
- Cross join
- Self join
- Multiple table joins

Pseudo columns

- Rank()
- Dense_rank()
- Rownum
- Rowid

PLSQL

- Store procedures
- Triggers
- Views

SQL clauses

- Where
- Group by
- Having
- Order by

Data Warehousing – ETL + BI

Data Warehouse Concepts:

- Introduction of Analytical system , Data Warehouse and ETL Process
- Architecture/technical Flow/Data Flow/High level Design of data warehouse
- Differences between OLTP and OLAP.
- Normalization and De-Normalization.
- Difference between relational and dimensional modelling.
- Introduction of Fact table, Dimension table and It's Types
- Surrogate Key
- Data Mapping Document

Data Warehousing - ETL + BI

Data Warehouse Concepts:

- Data Models:
  a) Conceptual Model
  b) Logical Model
  c) Physical Model
- Star Schema, Snowflake Schema, Galaxy Schema

Business Intelligence :

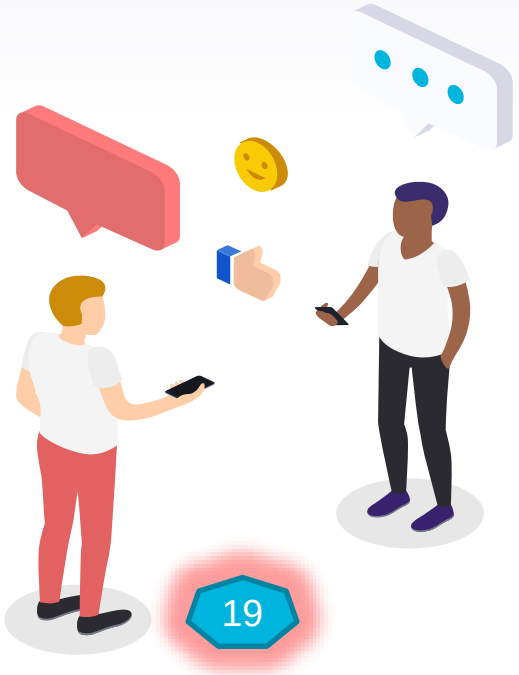
- Introduction of BI tool Tableau
- Report Development

Tools

1. SQL Developer
2. SQL server management studio
3. Visual studio +SSIS
4. Tableau

Post Course Completion Operations

- Technical interviews + HR interviews
- Resume building



Thanks !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TRAINING INSTITUTE
COURSES
SOFTWARE DEVELOPMENT &
SOFTWARE TESTING
8237916162 | 7385318590
8275219894 | 9766722458
info@credence.in
www.credence.in

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