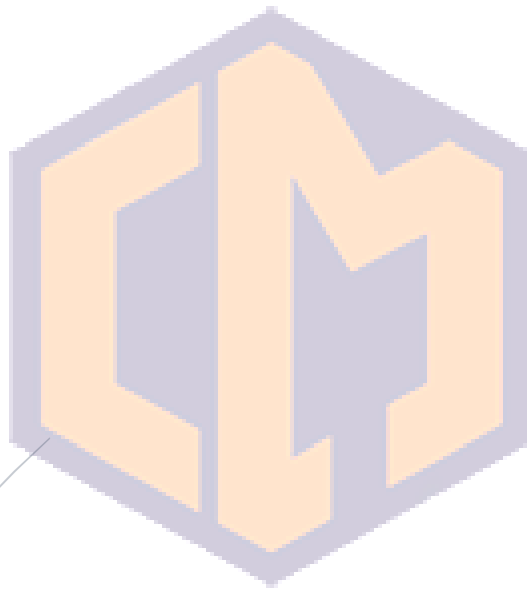




# Data Science

Syllabus



 **CoderMask**<sup>®</sup>

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# Phase I – Python Programming

## Introduction to Data Science

- About Data Science.
- Life Cycle of Data Science.
- Skills Required for Data Science.
- Application of Data Science.

## About Programming

- What is Programming?
- Different programming languages.
- Why Choose Python Programming?

## About Python

- Features
- Applications
- Popular Python IDEs.
- How to install Python?
- How to work with different IDEs?
- Introduction to Jupyter Notebook.



## Basics of Python Programming

- Comment, Statement
- Tokens
- Keyword, Identifiers, Delimiters, Literals

- Identifiers
- Variable

## Python Basic Data Types

- String
- Numeric

## Python Control Flow Statement

- Decision Statement
- Loop Statement

# Phase II – Data Structure with Python

## Python Advanced Data Structure

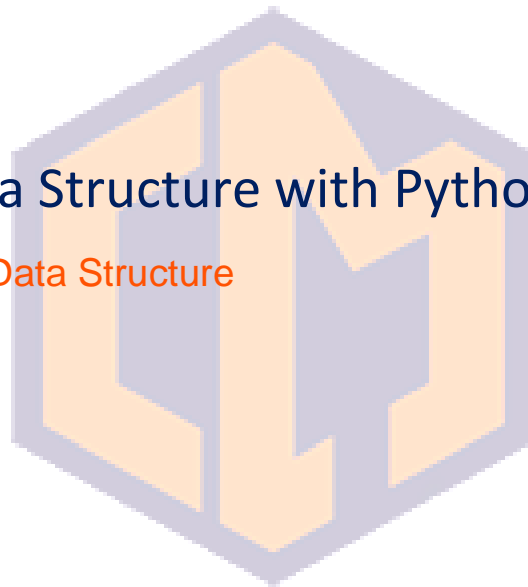
- List
- Tuple
- Dictionary
- Set

## Python Programming Style

- Procedural Programming
- Object-Oriented Programming

## Python Module and Package

- Popular Built-in Module and Packages for Data Science
- User-Defined Module and Packages



## Exception Handling

- Exception Handling Class and Statements
- Custom Exception Handling

## Regular Expression

# Phase III – Some Important libraries

## Introduction to Numpy

- N-Dimensional Array Data Structure
- Working with Matrices

## Introduction to Pandas

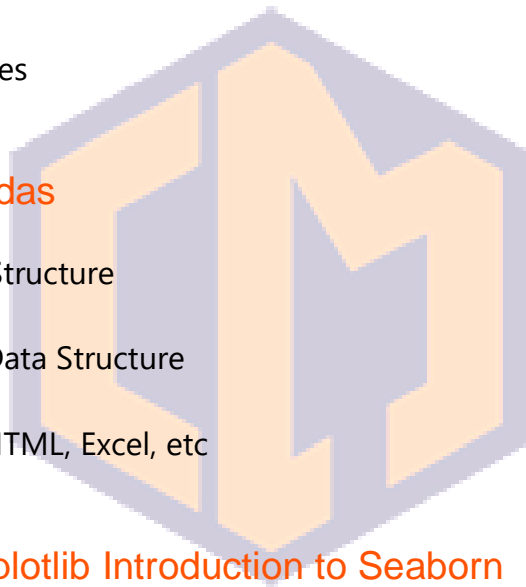
- Pandas Series Data Structure
- Pandas DataFrame Data Structure
- Working with CSV, HTML, Excel, etc

## Introduction to Matplotlib Introduction to Seaborn Data Collection

- Web API
- Web Scraping

## Data Processing

- Missing Data Handling
- Categorical Data Handling
- Outlier Treatment



## Data Analysis

- Descriptive Analysis
- Exploratory Data Analysis
- Statistical Analysis
- Inferential Analysis

## Phase IV – Text, Image & Data Processing

### Data Pre-Processing

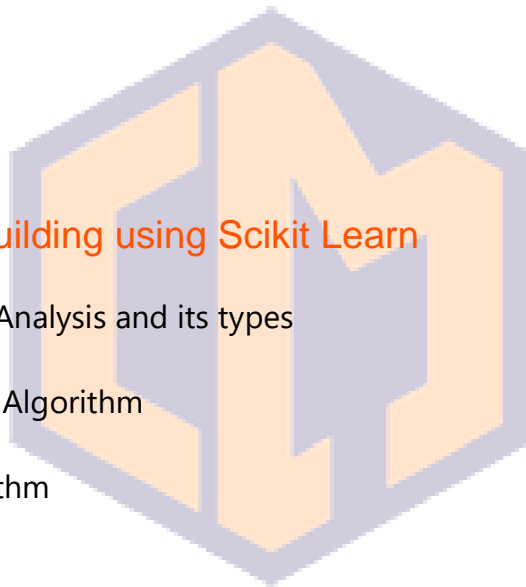
- Feature Scaling
- Feature Engineering

### Predictive Model Building using Scikit Learn

- What are Predictive Analysis and its types
- K-Nearest Neighbor Algorithm
- Decision Tree Algorithm
- Regression Model
- Classification Model
- Clustering Model

### Text Data Processing

- Introduction to Text Processing
- Text Processing using NLTK
- Predictive Model Building Using Naïve Bayes



## Image Data Processing

- Introduction to Image Processing
- Text Processing using OpenCV

## Phase V – Project & Certification

- Project
- certification

