MACHINE LEARNING

Introduction to Python

- Introduction and History of Python
- Installing Python and setting Environment
- IDLE
- How to execute Python program

Python Basics

- Python Tokens
    o Keywords
    o Literals
    o Identifiers
    o Operators
- Python statements
- Getting user input

Variables and Data Types

- Variables
- Numbers
- Strings
- Lists
- Tuple
- Dictionary

Decision Control Structure

- Control flow statements
- The **IF** statement
- Python Relational and Logical Operators
- The **WHILE** loop
- Break and Continue statement
- The **FOR** loop
- Pass statement

Functions

- Creating a function
- Calling a function
- Function with default values
- Calling function named arguments
- Built-in functions

Module

- Modules introduction
- Creating modules
- Importing Modules
- Standard Modules

Object Oriented Programming

- Introduction to OOPs
- Classes and Objects
- Instance methods
- Special class method
- Inheritance
- Method overriding
- Data Hiding
- Many more concepts...

Exception Handling

- What is Exception
- Try, except, finally and raise statements
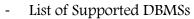- Handling Exception

GUI Programming

- Introduction to Tkinter
- Making window Object
- Working with widgets
    - Label
    - Button
    - Entry
    - RadioButton
    - Checkbox
    - Message
    - Combobox
    - Canvas
    - Many more
- Validating inputs
- Event handling

Database programming in Python

- Introduction to databases
- Creating database
- Making table
- Inserting, updating, removing and retrieving data from tables
- Intro to Python DB-API

- List of Supported DBMSs
- Connecting to database
- Executing queries
- Fetching data from database table
- Handling Transactions

Python Frameworks/Libraries

- Numpy
- Pandas
- MatplotLib

Introduction to Machine Learning

- Applications of Machine Learning
- Supervised vs Unsupervised Learning

Regression

- Linear Regression
- Non-linear Regression

Classification

- K-Nearest Neighbour

Unsupervised Learning

- K-Means Clustering