

Session 1: Introduction of python

- Why do we need Python?
- Program structure

Execution steps

- Interactive Shell
- Executable or script files
- User Interface or IDE

Session 2: Datatypes in python

Memory management and Garbage collections

- Object creation and deletion
- Object properties

Data Types and Operations

- Numbers
- Strings
- List
- Tuple
- Dictionary
- Other Core Types

Session 3: Loops and expression in python

Statements and Syntax

- Assignments, Expressions, and prints
- If tests and Syntax Rules
- While and For Loops
- Iterations and Comprehensions

Session 4: Load and export files in python

File Operations

- Opening a file
- Using Files
- Find and replace

Session 5: user-defined function in python

Functions

- Function definition and call
- Function Scope
- Arguments
- Function Objects
- Anonymous Functions

Session 6: Exception handling in python

Exception Handling

- Default Exception Handler
- Catching Exceptions
- Raise an exception

- User-defined exception

Session 7: Working pandas in python

Advanced Concepts

Pandas Section

- by P y t h o n P a n d a s I n t r o d u c t i o n
- Introduction to Data Structures
- by P y t h o n P a n d a s S e r i e s
- by P y t h o n P a n d a s D a t a F r a m e
- by P y t h o n P a n d a s B a s i c F u n c t i o n a l i t y
- by P y t h o n P a n d a s D e s c r i p t i v e S t a t i s t i c s
- by P y t h o n P a n d a s I n d e x i n g a n d S e l e c t i n g
- by P y t h o n P a n d a s F u n c t i o n A p p l i c a t i o n
- by P y t h o n P a n d a s R e i n d e x i n g
- by P y t h o n P a n d a s I t e r a t i o n
- by P y t h o n P a n d a s S o r t i n g
- by P y t h o n P a n d a s W o r k i n g w i t h T e x t D a t a
- by P y t h o n P a n d a s O p t i o n s a n d C u s t o m i z a t
- by P y t h o n P a n d a s M i s s i n g D a t a
- by P y t h o n P a n d a s G r o u p B y
- by P y t h o n P a n d a s M e r g i n g / J o i n i n g
- by P y t h o n P a n d a s C o n c a t e n a t i o n
- by P y t h o n P a n d a s I O T o o l s

- by Python Pandas Comparison with SQL
- by Python Pandas Dates Conversion

Session 8: Data science

Data Science and AI

All the topics in data science will covered with following concept: Mathematics beside of each model

- Which scenario we want to use particular algorithm
- How to apply it in tool
- Inferential thing of each model

Difference between each model

- Introduction to Machine Learning & Predictive Modelling
- Major Classes of Learning Algorithms -Supervised vs Unsupervised Learning

Statistics

- Standard Deviation
- Variance
- Concept of hypothesis testing
- T-test
- Chi-square
- Anova
- Correlation
- Probability

- Outliers
- Drop highly correlated features

Machine Learning

By Supervised Learning Classification

- Support vector machines classifier
- Naïve Bayes
- Nearest Neighbour
- Logistic Classification
- Decision tree Classifier
- Random forest classifier

Supervised learning -Regression

- Linear Regression
- Multiple Regression
- Polynomial Regression
- Exponential Regression
- Decision tree Regression
- Random forest Regression
- Feature selection using regression

Unsupervised Learning -Clustering

- K means clustering
- Hierarchical clustering

Ensemble method Techniques

Introduction to Natural Language Processing Pre-processing Text

- Get Synonyms from words
- Bag of Words
- Remove Punctuation
- Remove Stop Words
- Replace Characters
- Stemming Words
- Lemmatization with Python
- Gender finder
- Strip Whitespace
- Tokenize Text
- speech tagging
- Sentence Segmentation

Convert Text to Speech in Python Deep Learning

A subset of ML, Deep Learning (DL) is re-branding of neural networks- a class of models inspired by biological neurons in our brain.

Overview of the neural network, ANN