

Exploratory Data Analysis Python Course Content

CHAPTER 1: PYTHON – A BRIEF TOUR

- Why Python? (U.S.P of Python)
- Python object model
- Installing Python environment & package management
- Interactive learning using Jupyter notebooks
- Python data structures
- Python control structures & statements
- Useful Python built-in functions
- Functional programming
- Modules and namespaces
- Useful Python built-in and third-party modules
- Object oriented programming
- Real world examples
- Exercise

CHAPTER 2: DATA ANALYSIS

- Importance of data in current scenario
- Numpy arrays and vectorized computation
- Broadcasting using Numpy arrays
- Numpy ufuncs
- Take a dive into pandas
- Series, Dataframe and Index objects in pandas
- Analysis of structured and semi-structured data using pandas
- Data loading, storage and file formats
- Generating insights from data
- Data cleaning and preparation
- Data wrangling: Join, combine and reshape
- Plotting and visualization
- Data aggregation and group operations
- Time series
- Advanced pandas features

CHAPTER 3: STATISTICS

- Introduction and Data collection
- Descriptive statistics
 - Measures of central tendency
 - Variation and shape

- Sampling and population
- Empirical rule and Chebychev rule
- Covariance and Coefficient of Correlation
- Probability
 - Concepts of basic probability
 - Conditional probability
 - Bayes' Theorem
- Probability distributions
 - Probability distribution for a discrete random variable
 - Discrete distributions - Binomial and Poisson distribution
 - Continuous distribution - Normal distribution
 - Sampling and sampling distributions
- Hypothesis testing
 - Concepts
 - Null & Alternative hypothesis
 - Critical value of test statistics
 - Regions of rejection and acceptance
 - Critical value approach and p-value approach
 - One-tail & two-tail tests
 - Real world problems
- Regression
 - Linear regression
 - Multiple linear regression
 - Logistic regression
- Decision Analysis
 - How to structure a decision problem
 - Decision tree
 - Random forest

CHAPTER 4: DATA ANALYSIS EXERCISES

- UCI machine learning repositories
- Kaggle repository
- Food database
- Titanic dataset
- Movie dataset
- e-commerce dataset
- Federal election commission dataset
- CredirRisk dataset
- Pima-indians dataset
- World-alcohol dataset
- Primary school dataset
- CardioGoodfitness dataset
- Car-mpg dataset

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Know more about [Exploratory Data Analysis Python](#)



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