1. Basic Python for Data Science

Theory of Operators, Understanding Operators in Python, Understanding variables and data types, Variables and Data Types in Python, Understanding Conditional Statements, Implementing Conditional, Statements in Python, Understanding Looping Constructs, Implementing Looping, Constructs in Python, Looping Constructs test, Understanding Functions, Implementing Functions in Python, A brief introduction to data structure, Understanding the concept of Lists, Implementing Lists in Python, Understanding the concept of Dictionaries, Implementing Dictionaries in Python, Understanding the concept of Standard Libraries, Reading a CSV File in Python - Introduction to Pandas, Reading a CSV file in Python – Implementation, Reading a csv file in Python test, Understanding data frames and basic operations, Data Frames and basic operations test, Reading data frames and conduct basic operations in Python, Reading data frames and conduct basic operations in Python Test, Indexing a Data frame, Indexing Data Frames test, Understanding Regular Expressions, Regular Expressions in Python.

1. Statistics for Data Science

Mode of the data, Mode test, Understanding the various variable types, Understanding Variable Types test, Mean of the data, Outliers in the datasets, Median of the dataset, Spread of the data, Variance of the data, Standard Deviation of the data, Frequency Tables, Histograms, Introduction to Probability, Calculating Probabilities of events, Bernoulli Trials and Probability Mass Function, Probabilities for Continuous Random Variables, The Central Limit Theorem, Properties of the Normal Distribution, Using the Normal Curve for Calculations, Z score Part 1, Understanding the Z tables, Z score part 2, Introduction to Inferential Statistics, Mean Estimation, Confidence Interval and Margin of Error, Introduction to Hypothesis Testing, Steps to perform hypothesis testing, Directional Non Directional hypothesis, Understanding Errors while Hypothesis Testing, Degree of Freedom, T-Critical Value, T-Critical Value Test, Steps to perform T-Test, Steps to perform T-Test test, Conducting One sample T test, Paired T tests, 2 Sample T tests, Chi Squared Tests, Correlation test.

1. Data Manipulation and Visualization

Sorting Data frames, Merging Data frames, Apply function, aggregating data, Basics of Matplotlib, Data Visualization using Matplotlib, Basics of Seaborn, Data Visualization using Seaborn

1. Predictive Modeling and the basics of Machine Learning

Introduction to Predictive Modeling, Predictive Modeling Introduction test, Types of Predictive Models, Stages of Predictive Modeling, Understanding Hypothesis Generation, Data Extraction, Understanding Data Exploration, Reading the data into Python, Reading the data into Python : Implementation, Variable Identification, Variable Identification : Implementation, Univariate analysis for Continuous Variables, Univariate Analysis for Continuous Variables : Implementation, Understanding Univariate Analysis for categorical variables, Univariate analysis for Categorical Variables : Implementation, Understanding Bivariate Analysis, Bivariate Analysis : Implementation, Understanding and treating missing values, Treating missing values : Implementation, Understanding Outlier Treatment, Outlier Treatment in Python, Understanding Variable Transformation, Variable Transformation in Python, Basics of Model Building, Understanding Linear Regression, Implementing Linear Regression in Python, Understanding Logistic Regression, Implementation of logistic Regression, Understanding Decision Trees, Decision tree – Splitting, Decision tree splitting criteria, Implementation of Decision Tree, Introduction to Evaluation Metrics, Understanding Confusion Matrix, Accuracy, Alternatives of Accuracy, Precision Recall, Thresholding, AUC ROC, Log Loss, Evaluation Metrics for Regression, Adjusted R-squared, Introduction to Random Forest, Building a Random Forest, Hyper parameters of Random Forest, Implementation of random forest, Understanding K-means, Implementation of K-Means