



DATA SCIENCE USING PYTHON

INTRODUCTION TO PYTHON

- INTRODUCTION TO PYTHON
- INSTALLING PYTHON
- DIFFERENT IDE FOR PYTHON
- USING PIP COMMANDS
- PYTHON VS ANACONDA
- BASIC SYNTAX OF PYTHON
- VARIABLES IN PYTHON

PYTHON PROGRAMMING

- DATATYPES IN PYTHON
- PRIMITIVE DATA TYPES
- CORE TYPE
- LIST VS TUPLE
- DICTIONARY
- USING LOOPS IN PYTHON
- CONDITIONAL STATEMENTS IN PYTHON

INTRODUCTION TO DATA SCIENCE

- WHAT IS DATA SCIENCE
- APPLICATIONS OF DATA SCIENCE
- LIFE CYCLE OF DATA SCIENCE

INTRODUCTION TO DATA MANIPULATION

- INTRODUCTION TO NUMPY
- INSTALLING NUMPY
- PACKAGE IN PYTHON
- IMPORTING NUMPY
- CREATING DIFFERENT ARRAYS USING NUMPY
- ARRAY FUNCTIONS AND METHODS
- DIFFERENT MATHEMATICAL FUNCTIONS, DIFFERENT MATRIX OPERATIONS, RANDOM NUMBERS, GENERATE NUMBERS BETWEEN A RANGE

INTRODUCTION TO PANDAS (SERIES)

- PANDAS INTRODUCTION
- INSTALLING PANDAS IN PYTHON
- IMPORTING PANDAS, USE OF PANDAS
- CONCEPT OF SERIES IN PANDAS
- CREATING SERIES USING PANDAS
- DIFFERENT SERIES ATTRIBUTES
- SERIES VS LIST
- SERIES OPERATIONS
- SERIES FROM CSV FILE
- DIFFERENT FUNCTIONS IN SERIES
- DIFFERENT SORTING ALGORITHMS IN SERIES
- EXTRACTING VALUES FROM SERIES

- VALUE_COUNTS() METHOD
- APPLY() METHODS

INTRODUCTION TO DATAFRAME

- WHAT IS DATAFRAMES?
- USE OF DATAFRAMES
- CREATING DATAFRAME
- DATAFRAME DIFFERENT FUNCTIONS
- DROPPING COLUMNS/ROWS FROM DATAFRAME
- CREATE DATAFRAME FROM CSV FILE
- DISPLAY PARTICULAR COLUMNS FROM DATAFRAME
- ADD NEW COLUMN TO DATAFRAME
- BROADCASTING OPERATIONS IN DATAFRAME,
- DROPPING WITH NULL VALUES
- FILLING NULL VALUES
- DIFFERENT SORTING ALGORITHMS IN DATAFRAME
- SORTING FOR MULTIPLE COLUMNS
- RANK METHOD IN PANDAS
- FILTERING DATA IN DATAFRAME
- FILTERING DATA BASED ON CONDITION
- FILTER DATA WITH AND & OR
- OPERATIONS
- .ISIN() METHOD
- .ISNULL() & .NOTNULL() METHOD IN PANDAS
- .BETWEEN() METHOD IN PANDAS
- .DUPLICATED() METHOD IN PANDAS
- .DROP_DUPLICATES() METHOD IN PANDAS

MORE ABOUT PANDAS

- .SET_INDEX() & .RESET_INDEX() IN PANDAS
- RETRIEVE ROW VALUES USING LOC IN PANDAS
- RETRIEVE ROW
- VALUES USING ILOC IN PANDAS
- SET NEW/MULTIPLE VALUES FOR A SPECIFIC CELL OR ROW
- RENAME INDEX
- LABELS OR COLUMNS IN PANDAS
- DELETE ROWS OR COLUMNS IN PANDAS
- CREATE RANDOM SAMPLE WITH THE .SAMPLE() IN PANDAS
- THE .NSMALLEST() AND .NLARGEST() METHODS IN PANDAS
- .WHERE(),.QUERY(),.APPLY() METHODS IN PANDAS

INTRODUCTION TO DATA VISUALIZATION

- INTRODUCTION TO MATPLOTLIB
- INSTALLING MATPLOTLIB IN PYTHON
- DRAWING 2D GRAPHS
- LINE PLOT GRAPH
- BAR PLOT GRAPH
- SCATTER PLOT GRAPH
- HISTOGRAM
- PIE CHART
- DRAWING SUB PLOT
- MERGING OF GRAPH, PLOT
- GRAPH FROM CSV FILE

INTRODUCTION TO MACHINE LEARNING

- INTRODUCTION
- TYPES OF MACHINE LEARNING: SUPERVISED, UNSUPERVISED AND REINFORCEMENT LEARNING
- APPLICATIONS
- CLASSIFICATION VS PREDICTION PROBLEMS
- LINEAR REGRESSION ALGORITHM (PREDICTION PROBLEM)
- MEAN SQUARE ERROR
- R² SCORE
- LAB: EMPLOYEE SALARY PREDICTION USING LINEAR REGRESSION

INTRODUCTION TO LOGISTIC REGRESSION

- LOGISTIC REGRESSION THEORY
- LOGISTIC REGRESSION VISUALIZATION
- CONFUSION MATRIX
- ACCURACY SCORE
- DATA PREPROCESSING
- LAB:- SALES PREDICTION OF A COMPANY / TITANIC PASSENGER DEATH PREDICTION

