

Fundamentals of Data Science Lab

List of Experiments

1. Creating a NumPy Array

- a) Basic ndarray
- b) Array of zeros
- c) Array of ones
- d) Random numbers in ndarray
- e) An array of your choice
- f) Imatrix in NumPy
- g) Evenly spaced ndarray

2. The Shape and Reshaping of NumPy Array

- a) Dimensions of NumPy array
- b) Shape of NumPy array
- c) Size of NumPy array
- d) Reshaping a NumPy array
- e) Flattening a NumPy array
- f) Transpose of a NumPy array

3. Expanding and Squeezing a NumPy Array

- a) Expanding a NumPy array
- b) Squeezing a NumPy array
- c) Sorting in NumPy Arrays

4. Indexing and Slicing of NumPy Array

- a) Slicing 1-D NumPy arrays
- b) Slicing 2-D NumPy arrays
- c) Slicing 3-D NumPy arrays
- d) Negative slicing of NumPy arrays

5. Stacking and Concatenating Numpy Arrays

- a) Stacking ndarrays
- b) Concatenating ndarrays
- c) Broadcasting in Numpy Arrays

6. Perform following operations using pandas

- a) Creating dataframe
- b) concat()
- c) Setting conditions
- d) Adding a new column

7. Perform following operations using pandas

- a) Filling NaN with string
- b) Sorting based on column values
- c) groupby()

8. Read the following file formats using pandas

- a) Text files
- b) CSV files
- c) Excel files
- d) JSON files

9. Read the following file formats

- a) Pickle files
- b) Image files using PIL
- c) Multiple files using Glob
- d) Importing data from database

10. Demonstrate web scraping using python

11. Perform following preprocessing techniques on loan prediction dataset

- a) Feature Scaling
- b) Feature Standardization

- c) Label Encoding
- d) One Hot Encoding

12. Perform following visualizations using matplotlib

- a) Bar Graph
- b) Pie Chart
- c) Box Plot
- d) Histogram
- e) Line Chart and Subplots
- f) Scatter Plot