

Python

- Find all the element in a list which have been repeated eg. [1,2,3,1,3,4,5,6,4] repeated elements are : [1,3,4]
 - What is the time complexity of the project
- Write a function to check if a given number is prime or not.

Numpy

- Find the most similarity documents among 5 documents[Document 1 , Document2, ... Documnet 5]
 - Create 124 dimensional random vector to create the vectors for documents. Create a numpy array containing marks for 100 students for 5 subjects
- create random array for the above
- print the shape and dtype of the array
- find the min and maximum marks for the students in the 5 subjects
- What is the mean, median, mode of the marks of each students
- find the average marks for each of the students
- also find the number of students who passed all the subjects?

Series Exploration

```
import pandas as pd
pd.Series({}/[], ...)
```

- Create a series in pandas
 - Series using list
 - series using Dictionary
 - Series using two list for index and values
 - set series name
- Explore series attributes:
 - index, name, dtype, values
 - Indexing and slicing pandas series
 - Index using custom index
- Explore series operations
 - +, -, *, /
- Series Methods
 - sum, mean, median, max, min, std, sort_values, sort_index()
 - apply method (pandas series having height in cm to height in meter)
- Exploring index
 - What will happen if we set index as a list which has lesser number of elements
 - What will happend if one of the value in new index lies outside of the index present in the series
 - set name to index

DataFrame Basics

- Create a dataframe using
 - dictionary
 - numpy array
 - set column name to the dataframe
 - using csv file (data_studentlist.csv)(use header parameter)
- DataFrame Attributes
 - shape, size, ndim, columns, index, type, info, describe, head, tail, sample
 - replace column of dataframe
 - index column of dataframe using `.` operator
 - index column of dataframe using `[]` operator
 - index multiple columns
 - use loc and iloc to index certain subset of rows and columns
 - drop columns,
 - drop rows
 - conditional slicing