Aim:

To understand and implement basic Functionalities of Numpy & Mathplotlib libraries and the Pandas library in python.

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	of Numpy and MuthPlotlib Libraries in Python.
	& Pandas Library in python.
The	
THEON.	Numby is a Fundamental library for numerical
	completing in Python. It provides support for
	large multi-dimenssional arrays & materices along
	with a collection of mathematical Functions to
	operate on them efficiently.
	Mathphatlib is a plotting Library for Python.
	It is used for visularing data in the form at
	graphs & plots. This library allows users to
	Customiza Wayal Chila P. A. L. Cara L. L.
	Eustomize visual Style & layout, export to many
	file formats & environment.
(odes):-	Numpy Implementation:
	# (reating & Manipulating Arrays
	# Crating an Array
Notes 12 Min	import numpy as np
	# create on 1D Array
	array_1D = np. Array ([1, 2, 3, 4, 5])
	print ("10 Array:", array 10)
	may, array 1D)
	#Create a 2D Array
	array_2D = np. array ([[1, 2, 3], [4, 5, 6]])
	print ("2D Array!" gray-2D)
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	Pandas is a powerful & open source python
	library. The Pandas Library is used for data
	manipulation & analysis. Pandas consists at data
	Structures & Functions to perform efficient operations
	on data.
	Pandas is well suited for working for tabular
	data, such as spreadsheets or SQL Tables. The
	Pandus Library is an essential tool for data
	analyst, scientist & engineers working with the
	Structured data in python.
code:>	Creating a data frame using Pandas Library
	import pandas as pd
	import pandas as pd  # Calling Dataframe Constructor
	df = pd. Data Frame ()
	print (df)
	- Andrewson and the second
	#lists of strings
· ·	Ist = ['Greks', 'For', 'Rushi', '13', Portal, to', SVP(ET')
	# Calling DataFrame constructor on list.
	df = pd. Data Frame (1st)
	print (df)
	- Philic Colo

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Numpy	#Array Operations
(ode8:	ant = np. anay ([1, 2, 3])
	are = np. array ([4, 5, 6])
	print ("Addition: " and + are)
•	
	# element - wise Multiplication
	print ("Multiplication:" arrx * arr2)
	7
	#Mean & Standard Deviation
	print ("Mean: np. mean (array _ LD))
	print ("Standard deviation: "np. std (array_tD))
	# Array Reshaping & Slicing
	#Reshaping an away Reshape 10 away into the
	#2x3 Mutuz
	reshaped Averay = np. reshape (averay _ 1D, (2,3))
	print ("Reshaped Array in mshaped - Array)
	- Sola Fresh & Brief Ser 1982 was fresh & The Server
	#Slicing Aways: Slicing to get 1st & 2nd elements at
-	# an Away (1D)
I;;s	print ("Sliced Accesy:", array_10 [0:2])
n n	

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Conclusion:	This practical demonstrated using numby for away
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and the stage of t	plotting techniques.
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Codes:	Mathplotlib Implementation:
	#Plotting Basics:
	import math protlib. pyplot as pt
	# X & Y values for plotting.
	x = np. amay([0, 1, 2, 3, 4, 5])
	y = np. amay ([0, 1, 4, 9, 16, 25])
	#plotting the Graph
	pH. plot (x y label = "y = 2/2" (olor = "blue"
	pH.plot(x,y, label = "y = 22", 10lor = "blue",  marker = "0")
	#Adding Titles & labels:
	plt. title ("Basic line graph plotting:")  plt. title ("X-axis")
	plt. title ("Y=axis").
الميداد	Plt. legend ()
	#Display the Graph
	plt. Shau()
A Lagran	
Conclusion:	This practical demonstrated using Numpy for array
	munipulation & Muthphotlib for data visualization,
	thus convering key concepts, operations and
	plotting techniques.
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