Aim:

Data Visualization in python using Mathphtlib & Numpy Libraries. (Scatter plat, Base graph, Histogram, Line plat & Pie chart).

	a Visualization in Python using Muthphotlib &
Nur	apy Libraries (Scatter plot, Bare graph, Histo
	am, line plot & Pie Chart).
	•
	a visualization îs an essential part of
dat	a analysis It helps in interpreting complex
l v v	
dat	a sets by presenting them in a visual
lon	text such as graphs or chourts, which
1	kes the data easier to understand.
lib	rance Overview:
	tholotlib: It is a comprehensive library for
Cut	tions in python It provides an Object -
-70	tions in python It provides on Object -
oni	ented API for embedding plots into applications
	ng general purpose GUI Toolkits
	y grillian particular social s
Nu	mpy is a fundamental package for scientific
Con	routing Property TT provides support for
	ge multi-dimenssional average and motrices
dlo	
	operate on these aways.
	COPYLIFE ON MESE CONTROL
2	
Syntax: 8	The state of the s
im	port multiplotlib. pyplot as plt
	port numpy as np.
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A7	Scutter plot Code:
	#Generating data
	x = np. amay ([1, 2, 3, 4, 5])
	y = np. array([2, 4, 5, 7, 8])
	#Plotting the scotter Plot
	pH. scatter (x, y, rolor = "blue")
	plt fitte ('Scutter plot: Study Hrs Vs Exam Scores')
• 1	plt. xlabel (Hours of Study)
	ptt. ylubel ('Exam Sione')
	pH.show ()
8>	Bar Graph:
	#Data
	categories = [Product A - Product B' Product c']
	values = [20, 35, 30]
	# Plotting the Base graph
	plt-barellategones values color = ['Red', Blue green])
	plt. title (Bar Graph: Sales Performance)
	plt. sclabel ('Product')
	pt. ylabel ('Sales')
	plt. show ()
C	Histogram:
The second secon	#Generating random duta:
	data = np. random. normal (30, 5, 1000)
п (t) —	

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	·
	#Plotting the histogram
	plt. hist (data, bins = 30, color = 'purple', alpha = 0.7)
	pit-title ('Histogram: Age Distribution of employees)
	plt. xlabel ('Age')
	plt-ylabel ('Frequency')
	plt-Shaw ()
- 1 1	
D	line Plot:
	# Dato:
	time = np. amay ([1, 2, 3, 4, 5])
	prices = np. array (1 100, 102, 98, 105, 1101)
	#Plotting the Line Plot
	pH. plot (time, prices, marker = 'D', color = green')
	plt. title ('Line plot: Stock prices over time')
	plt. xlubel (Time (Days))
	pit-ylaber (Price)
- 4 -	ptt.Show ()
	the first of some from the land from the
E)	Pie-Chart
	#Data:
	companies = [Company A Company B', Company C']
	shares = [40, 30, 30]
	## Plotting the Pie Charet
	pit. pie (shares labels = Companies autoport =
	1.1.1.1.1.1. (colors = [gold', 'silver', bronze'])

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	pit-title ('Pie charet: Market Share') pit. show ()
Conclusion:	Data Visualization helps simplify complex datasets,
	enabling quick insights. Using pythm's Mathplotlib&
	Numpy, an individual can create various plots,
	each suited for specific types of data analysis
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