



Nizamiah
COLLEGE OF
ENGINEERING & TECHNOLOGY
UNIVERSITY

SCHOOL OF ENGINEERING AND TECHNOLOGY

Record of Applied and Action Learning (Programming Practice)

Subject Name: Data Analysis and visualization using Python (DAVP)

Subject Code: CU TM-1018

Semester: 1st

Name:

Mohammed shahid

Registration No.: 2418013 90011

Program/Branch: B.Tech/CSE

Specialization: C1C

Academic Year: 2024-25

Campus: Nizamnagaram



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ANDHRA PRADESH**

Certificate

This is to certify that Mr./Ms. Mohammed Shahid having
Registration No. 291801390011 of 1st Semester,
B.Tech Program, SOE I
School, Sri Balanagaram Campus has completed
number of experiments in Applied and Action
Learning Laboratory and fulfils the course
requirements.

Signature of the HoD/Dean

Signature of the Faculty

Office Seal

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School: SOET Campus: Mysore
Academic Year: 2024-25 Subject Name: DAV P Subject Code: G.V.I.MO-1019
Semester: 1st Program: B.Tech Branch: CSE Specialization: C/C
Date: 19/8/24

Applied and Action Learning

(Learning by Doing and Discovery)

Name of the Experiment: Generating bar chart using python

Coding Phase: Pseudo Code / Flow Chart / Algorithm

Pseudo code for line plot

1. Start
2. Import the matplotlib library
3. Define data list
4. Create a line plot which the data points
5. Label the x axis and y-axis
6. Add line plot title
7. Display the plot
8. End

Pseudo code for scatter plot

1. Start
2. Import matplotlib library
3. Define x and y data
4. Create scatter plot with colors and markers.
5. Set title and labels
6. Show plot
7. End

Pseudo code for bar plot

1. Start
2. Import matplotlib library
3. Define list of categories
4. Define values
5. Create bar plot with x and y axis
6. Set the title
7. Label "x-axis and y-axis"
8. Display the plot
9. End.

Pseudo code for Histogram

1. Start
2. Import matplotlib library
3. Define list of categories
4. Create histogram which colors and edge colors
5. Set title as 'histplot'
6. Label axes
7. Show plot
8. End.

* Testing Phase: Compilation of Code (error detection)

compilation code for line plot

```
a = [1, 2, 3, 4, 5]
b = [1, 16, 36, 64, 81]
# Create line plot
plt.plot(x, y)
plt.xlabel('a-values')
plt.ylabel('b-values')
plt.show()
```

compilation code for scatter plot

```
import matplotlib.pyplot as plt
x = [1, 4, 8, 9, 11]
y = [8, 10, 15, 18, 25]
plt.scatter(x, y, color='red', marker='o')
```

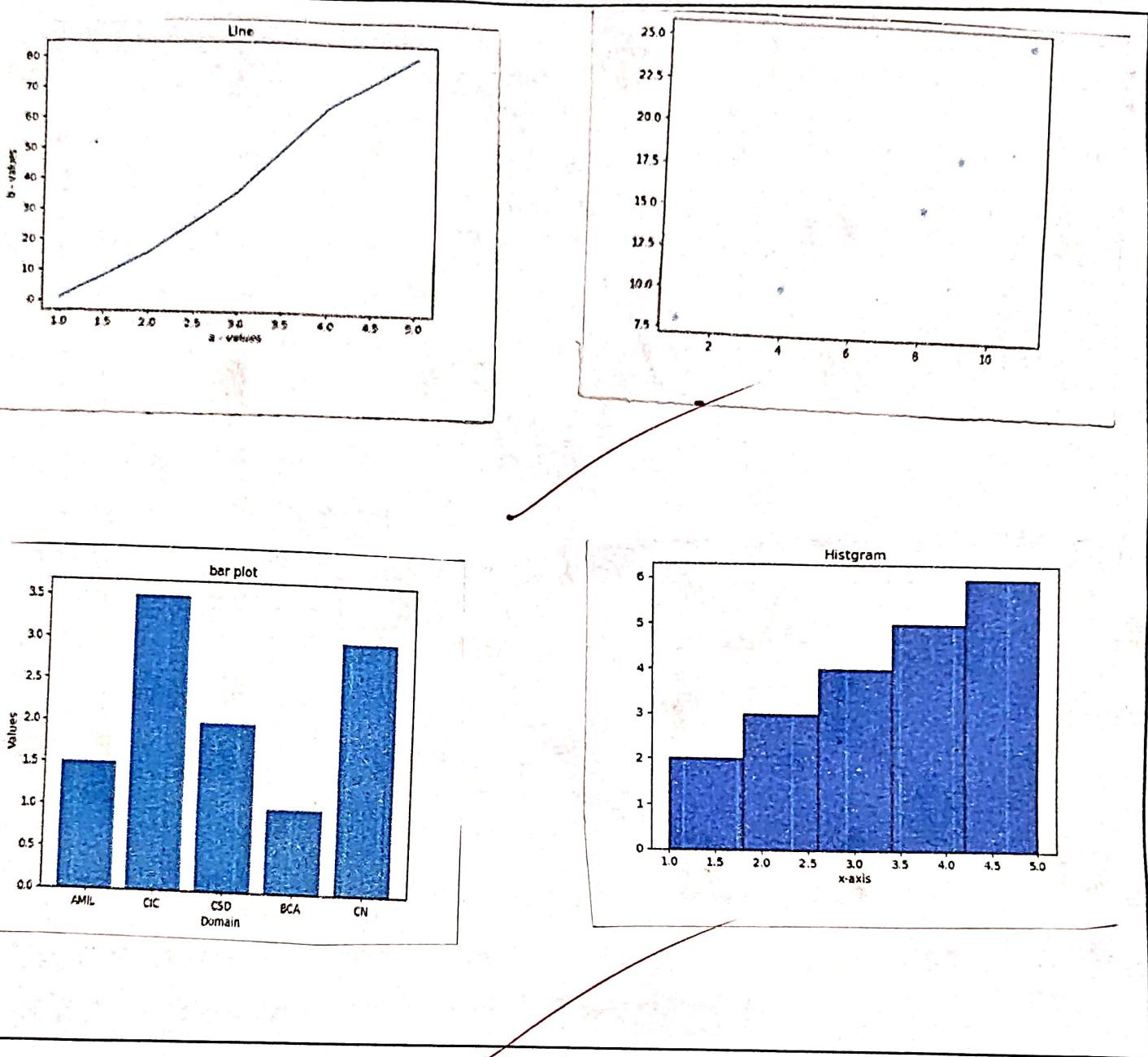
compilation code for bar plot

```
import matplotlib.pyplot as plt
categories = ['AIML', 'CIC', 'CSO', 'BCA', 'CN']
values = [15, 35, 20, 10, 30]
plt.bar(categories, values)
plt.title('barplot')
plt.xlabel('domains')
plt.ylabel('values')
plt.show()
```

Compilation code for histogram

```
# Histogram
import matplotlib.pyplot as plt
a = [1, 1, 2, 2, 2, 2, 3, 3, 3, 3, 5, 5, 5, 5, 5]
plt.hist(color='blue', bins=5)
plt.title('histogram')
plt.xlabel('x-axis')
plt.show()
```

Implementation Phase: Final Output (no error)



ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10	10	
Planning and Execution/ Practical Simulation/ Programming	10	9	
Result and Interpretation	10	10	
Record of Applied and Action Learning	10	9	
Total	50	48	

Signature of the Student: Mohammed Shahid
 Name: Mohammed Shahid
*As applicable according to the experiment.
 Two sheets per experiment. Program Note to be used.
 Regn. No.: 241801390011

Signature of the Faculty



School: SDE.T Campus: Nizamabad
Academic Year: 2024-25 Subject Name: DAVP Subject Code: CVTM-1018
Semester: 1st Program: B.Tech Branch: CSE Specialization: C.I.C
Date: 27/8/24

Applied and Action Learning

(Learning by Doing and Discovery)

me of the Experiment: Creating histogram and barplot

Coding Phase: Pseudo Code / Flow Chart / Algorithm

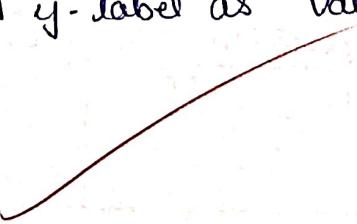
Pseudo code for histogram

- Start
- import matplotlib library
- Define dat list
- Create histogram (with bins, color, edge color)
- set title as "Histogram"
- set x-label as "data values" and y-label as "frequency"
- Show plot
- End



Pseudo code for bar plot

- Start
- import matplotlib library
- Define categories and values
- Create a bar plot (colour and edge color)
- Set title as "Bar plot"
- Set x label as "Domain" and y-label as "Values"
- Show plot
- End



* Testing Phase: Compilation of Code (error detection)

```
import matplotlib.pyplot as plt  
  
data = [1,1,2,2,2,3,3,3,3,4,4,4,4,5,5,5,5,5]  
  
plt.hist(data, color = "Black", bin = 6)  
  
plt.title("histogram")  
  
plt.xlabel("x-axis")  
  
plt.show()
```



```
import matplotlib.pyplot as plt
```

```
Catagories = ['AIML', 'CSD', 'CIC', 'BCA', 'CN']
```

```
Value = [15, 20, 35, 30, 25]
```

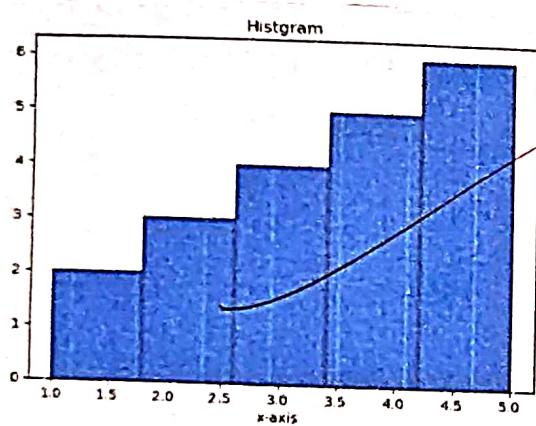
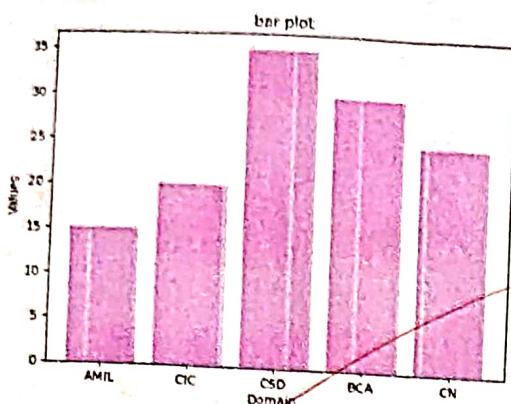
```
plt.bar(Catagories, values, color = "Violet")
```

```
plt.xlabel("Domains")
```

```
plt.ylabel("values")
```

```
plt.show()
```

Implementation Phase: Final Output (no error)



ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10	10	
Planning and Execution/ Practical Simulation/ Programming	10	9	
Result and Interpretation	10	9	
Record of Applied and Action Learning	10	10	
Total	10	9	
	50	47	

Signature of the Faculty

Signature of the Student: Mohammed Shahid
Name: Mohammed Shahid

*As applicable according to the experiment.
Two sheets per experiment. Program No. be used.

Regn. No.: 241801390011



School: SO ET Campus: Mysore
Academic Year: 2024 - 25 Subject Name: DAVP Subject Code: 6.1.7M-1018
Semester: 1st Program: B.Tech Branch: CSE Specialization: CIC
Date: 2/9/24

Applied and Action Learning

(Learning by Doing and Discovery)

me of the Experiment: Implementing area plot and barplot

Coding Phase: Pseudo Code / Flow Chart / Algorithm

Pseudo code for bar plot

- 1) Import matplotlib library
- 2) Define categories and values
- 3) Define colors
- 4) Create a bar chart with (colors, edge, colors)
- 5) Add title
- 6) Add labels
- 7) Display the chart
- 8) End

Pseudo code for scatter plot

- 1) Import matplotlib lib
- 2) Define x-value
- 3) Define y-value
- 4) Create a scatterplot with (x and y values, color, marker)
- 5) Add title
- 6) Add labels
- 7) Display chart
- 8) End

* Testing Phase: Compilation of Code (error detection)

```

import matplotlib.pyplot as plt
Categories = ["A", "B", "C", "D", "E"]
Values = [10, 30, 50, 70, 90]
color = ["purple", "black", "green", "blue", "indigo"]
plt.bar(Categories, Values, color=color, edgecolor="red")
plt.xlabel('x-axis')
plt.ylabel('y-axis')
plt.title("Bar plot")
plt.show()

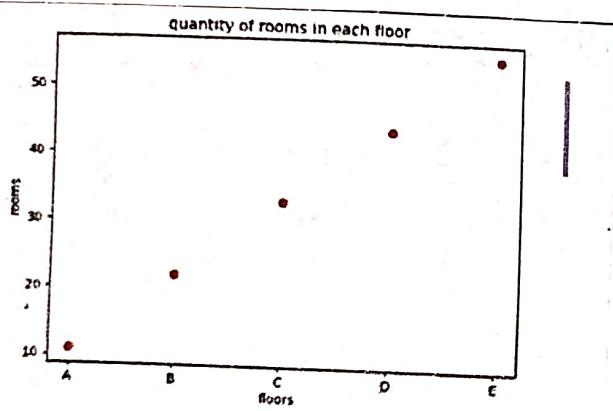
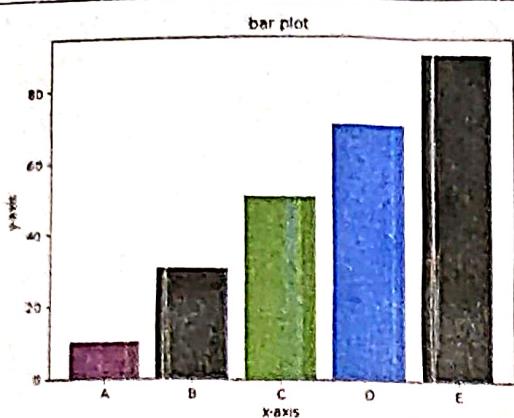
```

```

import matplotlib.pyplot as plt
x = ["A", "B", "C", "D", "E"]
y = [11, 22, 33, 44, 55]
plt.scatter(x, y, color="black", marker="*")
plt.title("Quantity of rooms in each floor")
plt.xlabel("floors")
plt.ylabel("rooms")
plt.show()

```

Implementation Phase: Final Output (no error)



ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10	10	
Planning and Execution/ actical Simulation/ Programming	10	9	
Result and Interpretation	10	9	
Record of Applied and Action Learning	10	10	
Total	50	47	

Signature of the Faculty

Signature of the Student: Mohammed Shahid
 Name: Mohammed Shahid
 *As applicable according to the experiment.
 Two sheets per experiment. Program No. be used.
 Regn. No.: 24180139001



School: SOET Campus: Nizamugram
Academic Year: 2024-25 Subject Name: DAVP Subject Code: CVTM-1018
Semester: 1st Program: B.Tech Branch: CSE Specialization: CIC
Date: 9/9/24

Applied and Action Learning

(Learning by Doing and Discovery)

me of the Experiment: Customizing pie plot and barplot

Coding Phase: Pseudo Code / Flow Chart / Algorithm

Pseudo code for pie plot

- > start
- > Import matplotlib lib
- > Define categories and values
- > Define explode and colors
- > Create pie chart with (autopct, shadow, explode, colors)
- > set title as "pie plot"
- > show plot
- > End

Pseudo code for Bar plot

- > start
- > Import matplotlib lib
- > Define categories list
- > Define values list
- > Create barplot with (color, edge color)
- > set title as "Bar plot"
- > Label the axes
- > show plot
- > End

* Testing Phase: Compilation of Code (error detection)

compilation code for Pie plot

```
Categories = ["AIML", "GSD", "St", "CN", "BCA"]
```

```
Value = [20, 40, 60, 80, 100]
```

```
Explode = (0, 0, 0.2, 0, 0)
```

```
Colours = {"Yellow", "gold", "green", "blue", "Light Corous",
```

```
"Light sky blue"]
```

```
plt.pie(values, labels=Categories, autopct='%1.1f%%', shadow=True)
```

```
Explode = explode, colors=colours)
```

```
plt.show()
```

compilation code for Bar plot

```
import matplotlib.pyplot as plt
```

```
Categories = ["AIML", "CIC", "GSD", "BCA", "CN"]
```

```
Values = [30, 250, 100, 150, 300]
```

```
plt.bar(categories, values, color="indigo")
```

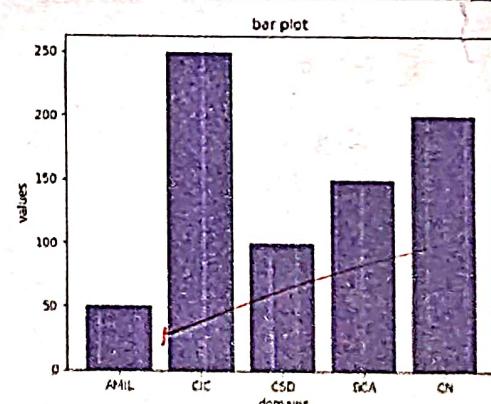
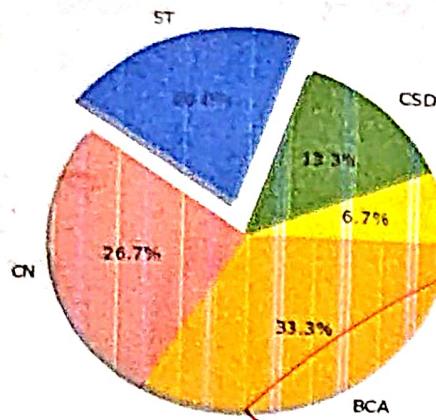
```
plt.title("bar plot")
```

```
plt.xlabel("domain")
```

```
plt.ylabel("values")
```

```
plt.show()
```

Implementation Phase: Final Output (no error)



ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10	10	
Planning and Execution/ Critical Simulation/ Programming	10	9	
Result and Interpretation	10	10	
Overall Applied and Action Learning	10	9	
	10	9	
	50	47	

of the Faculty

Signature of the Student: Mohammed Shahid
 Name: Mohammed Shahid
 *As applicable according to the experiment.
 Two sheets per experiment. Prog No. be used.
 Regn. No.: 241801390111



School: SOET Campus: Nirmangarwam
Academic Year: 2024-25 Subject Name: DAVP Subject Code: C.VTM-101.9
Semester: 1st Program: B.Tech Branch: CSE Specialization: C.I.C.....
Date: 16/9/24

Applied and Action Learning

(Learning by Doing and Discovery)

me of the Experiment: Comparing different types of plots

Coding Phase: Pseudo Code / Flow Chart / Algorithm

Pseudo code for Bubble chart :

- > Import matplotlib.pyplot
- > Create lists of x,y and size for coordinates and bubbles
- > Plot the Bubble chart using the x,y and size lists and specify the color and transparency
- > Set the title for the plot
- > Label the x-axis and y-axis
- > Display the plot
- > End

Pseudo code for heat map

Import the seaborn, matplotlib.pyplot and numpy lib

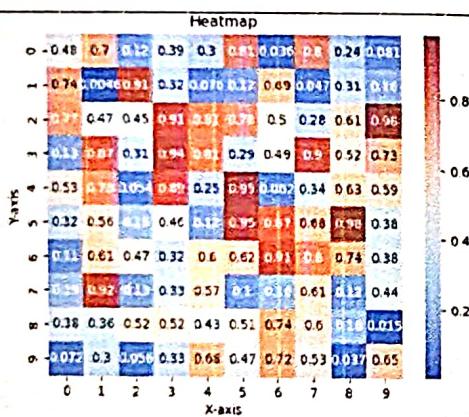
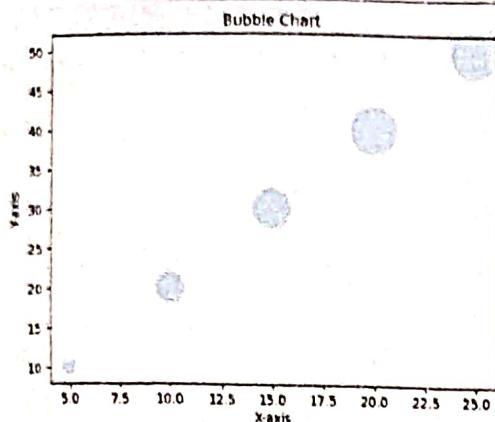
- > Create 10x10 matrix of random dat using numpy
- > Plot the heat map with the 'coolwarm' color.
- > Set the title of the plot
- > Label x-axis and y-axis
- > Show the plot
- > End

* Testing Phase: Compilation of Code (error detection)

```
import matplotlib.pyplot as plt  
x = [5, 10, 15, 20, 25]  
y = [10, 20, 30, 40, 50]  
size=[100, 300, 900, 1300, 1500]  
plt.scatter(x, y, s=size, color="black", alpha=0.5)  
plt.xlabel("x-axis")  
plt.ylabel("y-axis")  
plt.show()
```

```
import seaborn as sns  
import matplotlib as plt  
import numpy as np  
Data = np.random.rand(5,5)  
sns.heatmap(data, cmap='coolwarm', annot=True)  
plt.title("Heat map")  
plt.xlabel("x-axis")  
plt.ylabel("y-axis")  
plt.show()
```

Implementation Phase: Final Output (no error)



ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10	10	
Planning and Execution/ actical Simulation/ Programming	10	9	
Result and Interpretation	10	10	
Record of Applied and Action Learning	10	9	
Total	50	48	

Signature of the Faculty

Signature of the Student: Mohammed Shahid
 Name: Mohammed Shahid
 *As applicable according to the experiment.
 Two sheets per experiment. Page No. be used.
 Regn. No.: 241801390211



School: SOET Campus: Vishwagauram
Academic Year: 2024-25 Subject Name: DAVP Subject Code: CWTM-1018
Semester: 1st Program: B.Tech Branch: CSE Specialization: CIC
Date: 23/9/24

Applied and Action Learning (Learning by Doing and Discovery)

Goal of the Experiment: To create and make web scraping

Coding Phase: Pseudo Code / Flow Chart / Algorithm

Pseudo code to read CSV File

- 1) Import Pandas as pd
- 2) Read the csv file into a data frame
- 3) Print the data frame

Pseudo code to visualize the csv file in scatter plot

Import Seaborn, matplotlib.pyplot and numpy library

- 1) Create a data frame with "data" columns, "name", "marks" and "cino".
- 2) Create a scatter plot with "names" on x-axis and marks on y-axis.
- 3) Display the scatter plot.

Pseudo code to visualize the csv file in box plot:

Import seaborn, matplotlib.pyplot and numpy libraries

- 1) Create a box plot with "name" on x-axis and "mark" on y-axis.
- 2) Set the title of plot.
- 3) Display the plot.

* Testing Phase: Compilation of Code (error detection)

```
# Read csv file
import pandas as pd
data = pd.read_csv("Nikhil.csv")
print(data)

# To visualize the data in scatter plot
import seaborn as sns
import numpy as np
sns.scatterplot(x="Name", y="marks", hue="sinα", data=data,
alpha=1)
plt.show()

# To visualise dad plot
import seaborn as sns
import matplotlib.pyplot as plt
import numpy as np
sns.boxplot(x="name", y="marks", data=data)
plt.title("Box plot")
plt.show()
```

Implementation Phase: Final Output (no error)

Implementation Phase: Final Output (no error)

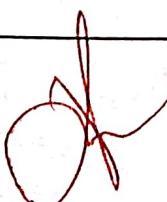
Final output of the program is displayed below:

```
10
9
9
9
9
44
```

ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10	10	
Planning and Execution/ Practical Simulation/ Programming	10	9	
Result and Interpretation	10	10	
Record of Applied and Action Learning	10	9	
Viva	10	9	
Total	50	44	

Signature of the Faculty



Signature of the Student: Mohammed Shahid
Name: Mohammed Shahid
*As applicable according to the experiment.
Two sheets per experiment
Regn. No. : 24181340011

School: SOET Campus: Nizamnagaram
Academic Year: 2024-25 Subject Name: DAVP Subject Code: CVTM-1018
ion
on
Semester: 1st Program: B-Tech Branch: CSE Specialization: CIC
Date: 30/9/24

Applied and Action Learning

(Learning by Doing and Discovery)

of the Experiment: Implementing data reading function
ing Phase: Pseudo Code / Flow Chart / Algorithm

do code to read csv files.

import pandas library

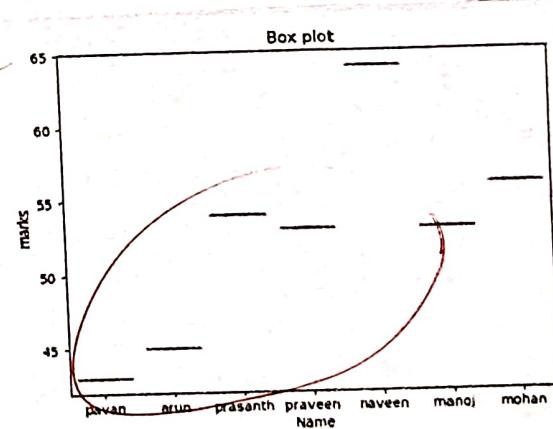
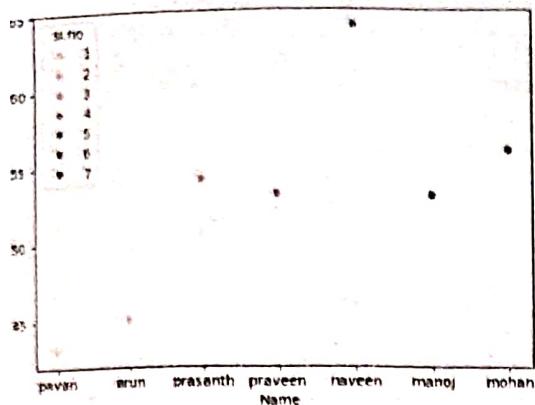
Read the CSV file into a data frame using pd.read_csv

Print the data frame.

* Testing Phase: Compilation of Code (error detection)

```
# read csv file  
import pandas as pd  
df = pd.read_csv('nikhil.csv')  
print("df")
```

Implementation Phase: Final Output (no error)



ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
cept	10	10	
ining and Execution/ actical Simulation/ Programming	10	9	
ult and Interpretation	10	10	
ord of Applied and Action Learning	10	9	
al	10	10	
	50	40	

e of the Faculty

Signature of the Student: Mohammed Shahid
 Name: Mohammed Shahid
*As applicable according to the experiment.
 Two sheets per experiment. Project No. be used.
 Regn. No.: 241801340011



School: SOET Campus: VIBHAWAYAAR

Academic Year: 2024-25 Subject Name: DAVP Subject Code: CDTM-1018

Semester: 1st Program: B.Tech Branch: CSE Specialization: CIC

Date: 21/10/24

Applied and Action Learning (Learning by Doing and Discovery)

Goal of the Experiment: Analyzing data using pandas

Working Phase: Pseudo Code / Flow Chart / Algorithm

Import matplotlib library

Create lists of x, y, y₂ for the data

Create first area plot between x, y, with colour and transparency.

Create second area plot b/w x, y₂ by colour and transparency.

Set title for the plot.

Label x-axis and y-axis

Add a legend to differentiate between two areas

Display the plot

The End.

Import matplotlib library

Create a list for labels, sizes, colors and percentage.

Create piechart with (sizes, explode, labels, colors, percentage, shadow)

Set the title for the plot

Display the plot

The End.

* Testing Phase: Compilation of Code (error detection)

Applied and Ad

Create area plot

```
import matplotlib.pyplot as plt
```

```
x = [1, 3, 5, 7, 9]
```

```
y1 = [2, 4, 13, 11, 10]
```

```
y2 = [1, 3, 5, 7, 9]
```

```
plt.fill_between(x, y1, color = "indigo", alpha = 1, label = "y1",  
edgecolor = "black")
```

```
plt.fill_between(x, y2, color = "yellow", alpha = 1, label = "y2",  
edgecolor = "black")
```

```
plt.title('Area plot')
```

```
plt.xlabel('x-axis')
```

```
plt.ylabel('y-axis')
```

```
plt.legend()
```

```
labels = ['chocolate', 'vanilla', 'strawberry', 'pistachio']
```

```
size = [30, 25, 20, 15]
```

```
colours = ['brown', 'white', 'pink', 'green']
```

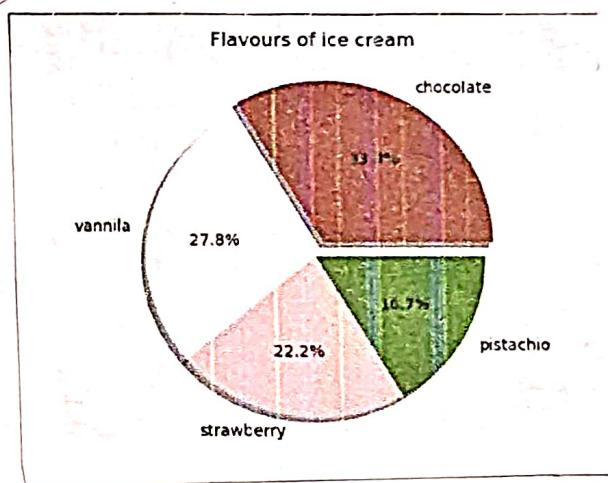
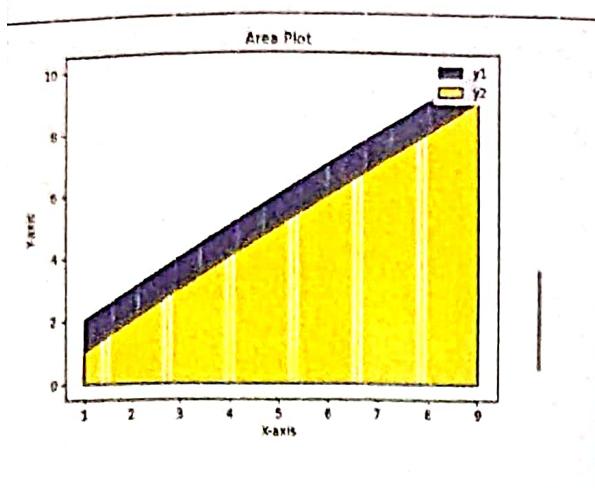
```
explode = [0.1, 0, 0, 0]
```

```
plt.pie(size, explode = explode, labels = labels, colors = colours, autopct = '%.1f %%', shadow = True)
```

```
plt.title('flavours of icecream')
```

```
plt.show()
```

plementation Phase: Final Output (no error)

**ASSESSMENT**

Rubrics	Full Mark	Marks Obtained	Remarks
cept	10	10	
ining and Execution/ actical Simulation/ Programming	10	9	
ult and Interpretation	10	10	
ord of Applied and Action Learning	10	9	
al	10	9	7
	50	47	

e of the Faculty

Signature of the Student: Mohammed Shahid

Name: Mohammed Shahid

*As applicable according to the experiment.
Regn. No.: 241801340011 Two sheets per experiment. P1og20N0be used.

Applied and Action Learning

(Learning by Doing and Discovery)

of the Experiment: creating plot and various charts using python

doing Phase: Pseudo Code / Flow Chart / Algorithm

Pseudo code for scatter plot

```
import matplotlib.pyplot as plt
```

creat of list of x and y

set title for plot

set the x-axis and y-axis

plot the scatter plot with
x and marker

display the plot

Pseudo code for line plot

1. import matplotlib.pyplot as plt
2. create a list of a and b
3. Plot the data with specified colors and linestyle
4. label x-axis and y-axis
5. set the title
6. Display the plot

Pseudo code for histogram

```
import matplotlib.pyplot as plt
```

3 plt

create a list data

create a histogram with colors
nd edge colors

set the title

set the x-axis and y-axis

display the plot

Pseudo code for bar chart

1. Import matplotlib.pyplot as plt
2. create lists for categories and values
3. Plot the bar chart with values
and categories.
4. set the title
5. label the x-axis and y-axis
6. Display the plot

* Testing Phase: Compilation of Code (error detection)

Scatter plot

```
import matplotlib.pyplot as plt
x = [5, 10, 15, 20, 25]
y = [6, 12, 18, 24, 30]
plt.title ("scatter plot")
plt.xlabel ("x-axis")
plt.ylabel ("y-axis")
plt.scatter (x,y, color="black",
            marker="o")
plt.show()
```

Line plot

```
import matplotlib.pyplot as plt
x = [1, 4, 8, 10, 12]
y = [10, 12, 14, 16, 18]
plt.plot (x,y, marker=
          color="blue",
          plt.xlabel ("x-axis")
          plt.ylabel ("y-axis")
          plt.title ("line plot")
          plt.show ()
```

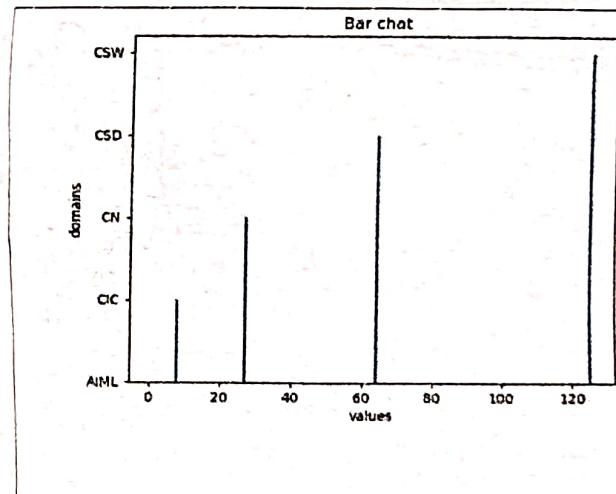
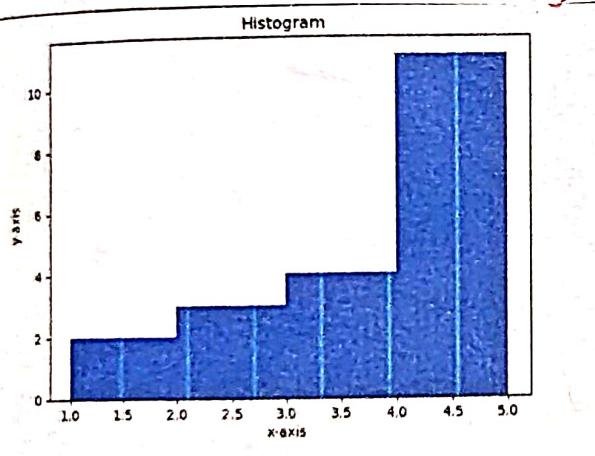
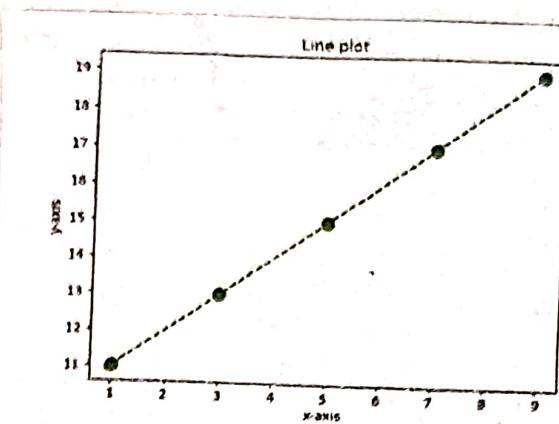
Histogram

```
A = [1, 1, 2, 2, 3, 2, 3, 3, 4, 4, 4, 4,
      5, 5, 5]
plt.hist (A, color="blue", bins=5)
plt.title ("histogram")
plt.xlabel ("x-axis")
plt.show ()
```

Bar chart

```
categories = ["AIML",
              "CIC", "CS"]
values = [1, 5, 7, 9, 12]
plt.bar (values, categories,
         plt.title ("Bar chart")
         plt.xlabel ("values")
         plt.ylabel ("domains")
         plt.show ()
```

Implementation Phase: Final Output (no error)



ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10	10	
Planning and Execution/ Practical Simulation/ Programming	10	9	
Result and Interpretation	10	10	
Record of Applied and Action Learning	10	9	
Total	50	48	

Signature of the Faculty

Signature of the Student: Mohammed Shahid
 Name: Mohammed Shahid
 *As applicable according to the experiment.
 Two sheets per experiment
 Regn. No.: 241801390011

School: SBET

Campus: Viswagangam

Academic Year: 2024-25 Subject Name: DAVP Subject Code: CETM-1018

Semester: 1st Program: BTech Branch: CSE Specialization: CIC

Date: 30/9/2024

Applied and Action Learning

(Learning by Doing and Discovery)

of the Experiment: Representation of heat bubble chart and map

ding Phase: Pseudo Code / Flow Chart / Algorithm

line URL for

rt

Pintall dashboard

import Pandas as pd

import numpy as np

from bs4 import BeautifulSoup

in URL for the flight dataset

re the HTML content of the webpage using a parser

from and print flight number

extract and print prices

print the URL

end

* Testing Phase: Compilation of Code (error detection)

```
import all requests
from bs4 import BeautifulSoup

# fetch the webpage content
url = "https://example.com/flights"
response = requests.get(url)

soup = BeautifulSoup(response.content, 'html.parser')
```

extract flight data

```
flight_numbers = soup.find_all('td', class_='flight_number')
```

for flight in flight_numbers:

```
print(f'flight number: {flight.text.strip()}')
```

```
destination = soup.find_all('td', class_='destination')
```

for destination in destinations:

```
print(f'destination: {destination.text.strip()}'')
```

extract prices

```
prices = soup.find_all('td', class_='price')
```

for price:

```
print(f'Price: {price.text.strip()}'')
```

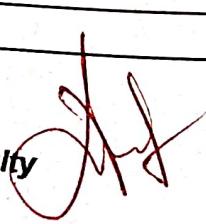
```
print(url)
```

Implementation Phase: Final Output (no error)

ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10	10	
Planning and Execution/ Critical Simulation/ Programming	10	10	
Result and Interpretation	10	9	
Record of Applied and Action Learning	10	10	
Total	10	9	
	50	48	

Signature of the Faculty



Signature of the Student: Mohammad Shahid
Name: Mohammad Shahid
*As applicable according to the experiment.
Two sheets per experiment. Page No. to be used.
Regn. No.: 24180390011

School: S.O.E.T. Campus: NITRIANAGARAM
Academic Year: 2024-25 Subject Name: DAVP Subject Code: COTM41018
Semester: 1st Program: BTech Branch: CSE Specialization: CIC
Date: 11/11/2024

Applied and Action Learning

(Learning by Doing and Discovery)

of the Experiment: Implementing dashboard using python

Learning Phase: Pseudo Code / Flow Chart / Algorithm

Pseudo code for line plot:-

Start

P install dashboard

import pandas as pd

import numpy as np

import plotly.express as px

import seaborn as sns

from dash import dash, html, dcc

app = dash.Dash(__name__=)

from dash import dash_table

from dash import dash, dcc, html, input, output

nd

* Testing Phase: Compilation of Code (error detection)

```
# Load dataset
df = sns.load_dataset("tips")
app = Dash(__name__)
```

```
# layout
app.layout = html.Div[
```

html.H3("Tips dataset Dashboard", style={})

Dropdown to select column

html.Label("Select x-axis for visualization")

dcc.Dropdown(

id='x-axis'

options=[{'label': w1, 'value': col}])

Pie chart

html.Label("Select columns for pie chart")

dcc.Dropdown(

id='Piechart-col'

value='sex'

options=[{'label': col, 'value': df.columns.}

Bar chart

dcc.Graph(id='Piechart')

output('bar-chart', figure)

input('y-axis', value)

def update_Pie(column):

return px.Pie(title="Invalid statement")

run in app

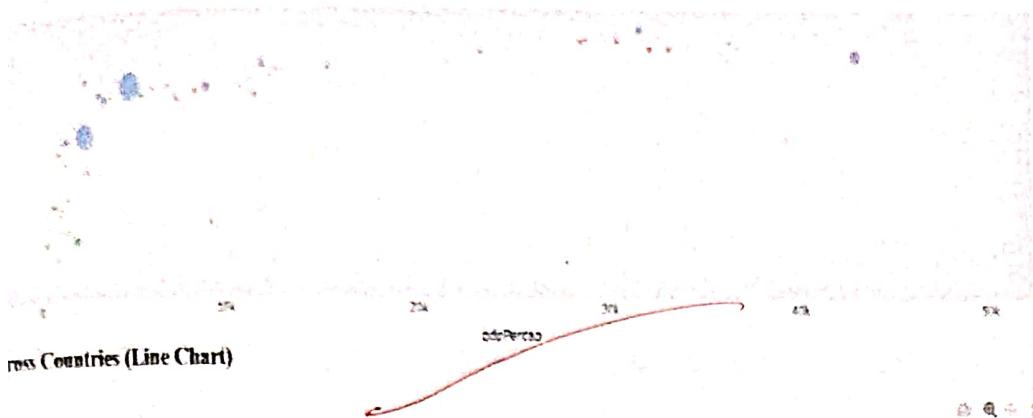
if __name__ == 'main':

app.run_server(port=8003, debug=True)

Implementation Phase: Final Output (no error)

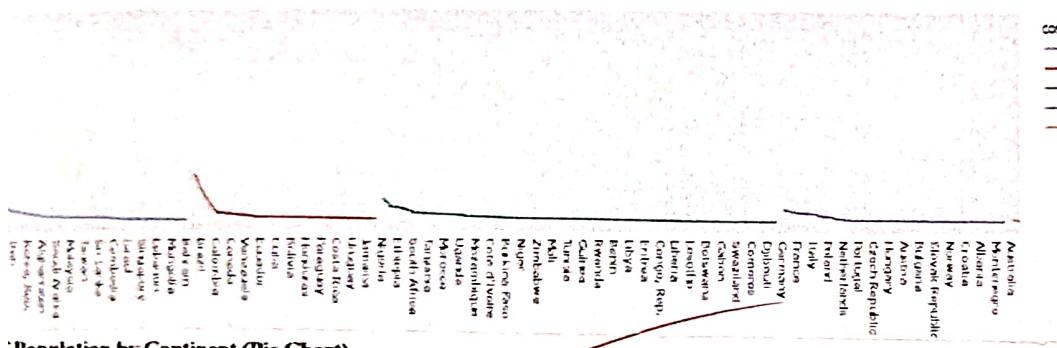
Capita vs Life Expectancy (Scatter Plot)

GDP per Capita vs Life Expectancy



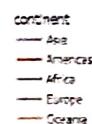
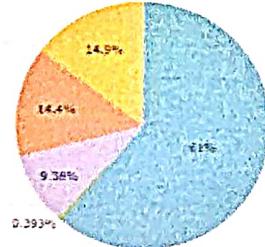
GDP Across Countries (Line Chart)

GDP Across Countries



Population by Continent (Pie Chart)

Population by Continent



Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10	10	
Planning and Execution/ Technical Simulation/ Programming	10	9	
Result and Interpretation	10	10	
Overall of Applied and Action Learning	10	9	
	10	9	
	50	42	

Signature of the Faculty

Signature of the Student: M. Shahid

Name: M. Shahid

*As applicable according to the experiment.
Two sheets per experiment. Prog No. be used.

Regn. No.: 241801390011



School: SOET Campus: Nizamabad

Academic Year: 2024-25 Subject Name: DAVP Subject Code: COTM-1018

Semester: 1st Program: BTech Branch: CSE Specialization: CIC

Date: 18/11/2024

Applied and Action Learning

(Learning by Doing and Discovery)

of the Experiment: Customize dashboard component

ding Phase: Pseudo Code / Flow Chart / Algorithm

Start

ip install dash

import dash components as dc

import dash_html_components as html

import numpy as np

import pandas as pd

import plotly_express as px

end

* Testing Phase: Compilation of Code (error detection)

1) Text style

style = {"text-align": "center", "color": "#4CAF50"}

2) Dropdown style

style = {"width": "50%", "display": "inline-block",
"margin-right": "5px";}

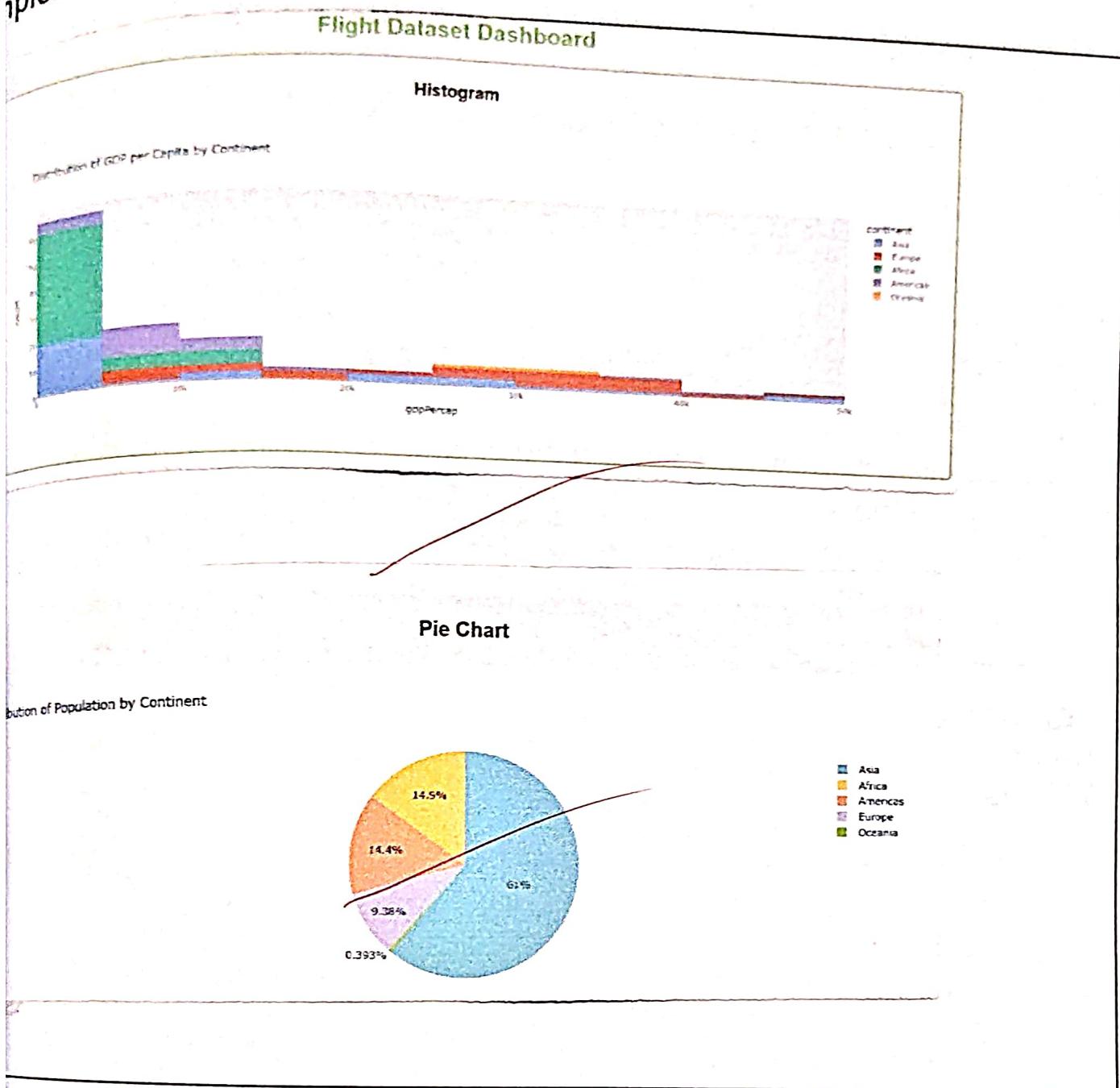
3) Styling

style = {"border": "3px solid #4CAF50", "border-radius": "5px", "margin": "4px", "padding": "2px"}

4) Background

"Background color": "#1E8449"

Implementation Phase: Final Output (no error)

**ASSESSMENT**

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10	10	
Planning and Execution/ Practical Simulation/ Programming	10	6	
Result and Interpretation	10	9	
Record of Applied and Action Learning	10	10	
Total	10	9	
	50	48	

Signature of the Faculty

Signature of the Student: Mohammed Shahid
Name : Mohammed Shahid
**As applicable according to the experiment.*
Regn. No. : 241801390011 *Two sheets per experiment. Program No. to be used.*



School: SOET Campus: Nizamayyam
Academic Year: 2024-25 Subject Name: DAVP Subject Code: CUTN-1018
Semester: 1st Program: BTech Branch: CSE Specialization: C.I.C.
Date: 25/11/2024

Applied and Action Learning

(Learning by Doing and Discovery)

of the Experiment: Plot simple and simple advanced stacked plot
ding Phase: Pseudo Code / Flow Chart / Algorithm

```
!pip install dash
import dash
from dash import dcc
from dash import html
from dash import Input, Output
import plotly.express as px
import seaborn as sns.
```

* Testing Phase: Compilation of Code (error detection)

① Search functionality

```
dcc.dropdown (
```

`id='y-n18'; #unique identifies for call back`

`options = [{label: col, value: col} for col in tips = df.columns]`

`value=total_bill; #Default.`

~~`style = {"width": "50%", "display": "`~~

~~`"margin-right": 5px"}`~~

```
html.Div (
```

`html.label ("Select year (if applicable):" style={`

`bold),`

~~`dcc.dropdown (`~~

~~`id='filter-year'`~~

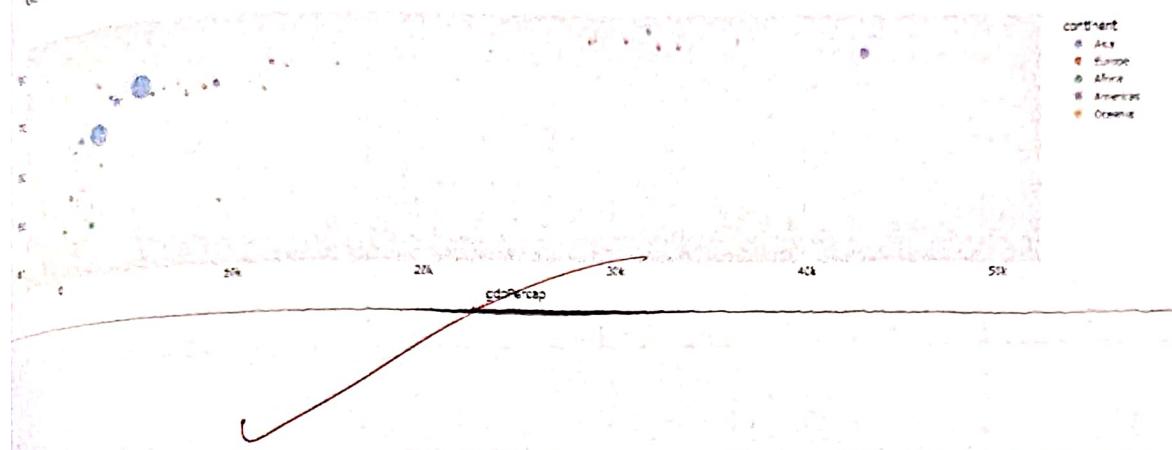
~~`option = [{"label": year, "value": y}`~~

Implementation Phase: Final Output (no error)

Interactive Flight Dataset Dashboard

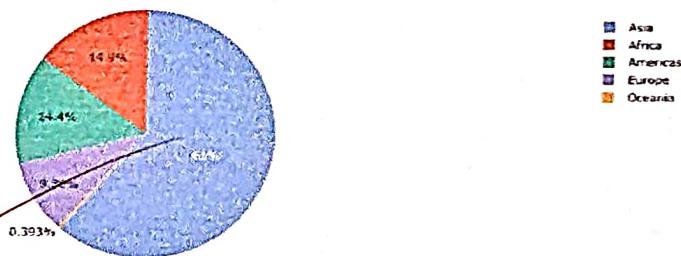
for Plot

GDP per Capita vs Life Expectancy



Chart

Population Distribution by Continent



ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Conceptual Understanding	10	10	
Designing and Execution/ Practical Simulation/ Programming	10	10	
Data Analysis and Interpretation	10	9	
Overall Application of Applied and Action Learning	10	10	
	10	9	
	50	48	

of the Faculty

Signature of the Student: Mohammed Shahid

Name: Mohammed Shahid

*As applicable according to the experiment.
Two sheets per experiment. Program No. be used.
Regn. No.: 24801390011

School: SOET

Campus: Nizamabad

Academic Year: 2024-25 Subject Name: DAVP Subject Code: COTM-101

Semester: 1st Program: B.Tech Branch: CSE Specialization: CIC

Date: 2/12/2024

Applied and Action Learning (Learning by Doing and Discovery)

Goal of the Experiment: Test live updating feature in dashboard

Working Phase: Pseudo Code / Flow Chart / Algorithm

start

import plotting, figure, show from bokeh.plotting

import output notebook from bokeh.io

import column data source from bokeh.model

import seaborn as sns.

import pandas as pd

import plotly express as px

end

* Testing Phase: Compilation of Code (error detection)

```

# import necessary libraries
# load the flights dataset from seaborn
flights = sns.load_dataset("flights")

# OUTPUT
output_notebook()

months = flights[month].unique()
month_color = {month: color for month, color in
               zip(months, sns.color_palette("husl", 12).as_hex())}

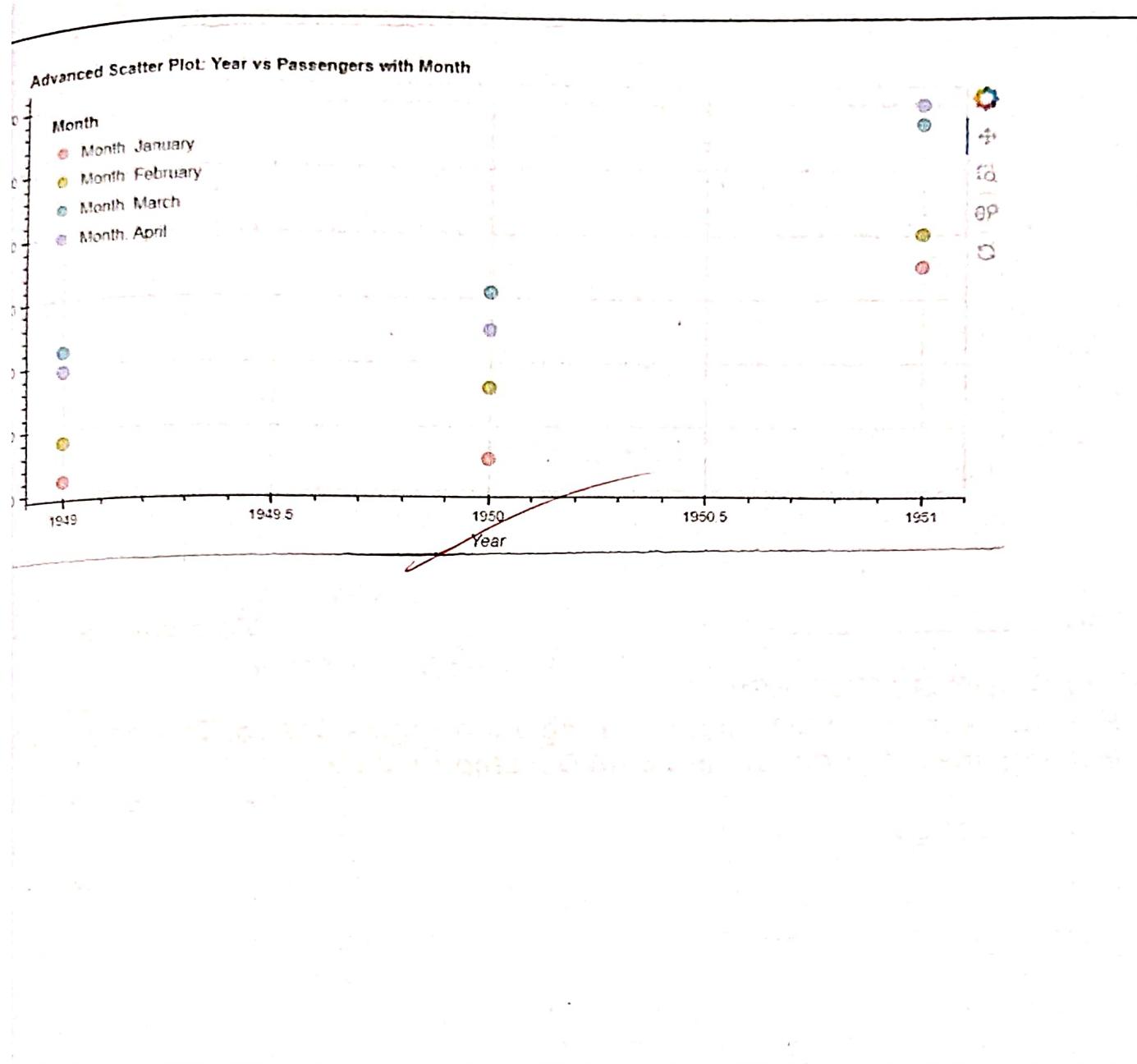
# Create a Bokeh figure
p = figure(title="Advanced scatter plot: year vs. Passengers with month",
           x_axis_label="year", y_axis_label="number of passengers",
           width=800, height=400)
tools = PanTool, WheelZoomTool, BoxZoomTool, ResetTool)

# add scatter glyphs for each month with colors
subset = flights[flights[month] == month]
p.scatter(subset["year"],
          subset["passenger"]
          )

# customize legend
p.legend.location = "top_left"
p.legend.title = "month"
p.legend.background_fill_alpha = 0.6
# show plot
show(p)

```

Implementation Phase: Final Output (no error)



ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Experimentation	10	10	
Designing and Execution/ Technical Simulation/ Programming	10	9	
Analysis and Interpretation	10	10	
Overall Application of Applied and Action Learning	10	9	
	10	9	
	50	47	

Signature of the Faculty

Signature of the Student: Mohammed Shahid

Name : Mohammed Shahid

*As applicable according to the experiment.

Regn. No. : 241801390011 Two sheets per experiment Program No. be used.

School: SDET

Campus: Viswanagaram

Academic Year: 2024-25 Subject Name: DAVP Subject Code: CVTM-1018

Semester: 1st Program: BTech Branch: CSE Specialization: CIC

Date: 9/12/2024

Applied and Action Learning

(Learning by Doing and Discovery)

Goal of the Experiment: Create and manipulate additional glyphs
Working Phase: Pseudo Code / Flow Chart / Algorithm

art

rom bokeh . plotting import figure

rom bokeh . core import till.html

rom bokeh import CON

rom dash import dash

rom dash import html, dcc

rom dash import input, output

import Pandas as pd

import seaborne as sns

nd

* Testing Phase: Compilation of Code (error detection)

```

# Load the flights dataset
flight_df = sns.load_dataset()

# Create a bokeh figure for a predefined feature
feature = 'passengers'

p = figure(
    title=f'Bokeh scatter and line plot for {feature}',
    x_axis_label='month',
    y_axis_label=feature,
    width=1100,
    height=400,
    background_fill_color="#f9f9f9"
)

# Add glyphs: scatter and Line plot
p.circle(x=flights_df['month'].astype(str),
          y=flights_df[feature], size=10, color='navy', alpha=0.6,
          legend_label='circles')

# Generate HTML content of the bokeh plot
html_content = file_html(p, CDN_Bokeh_plot)

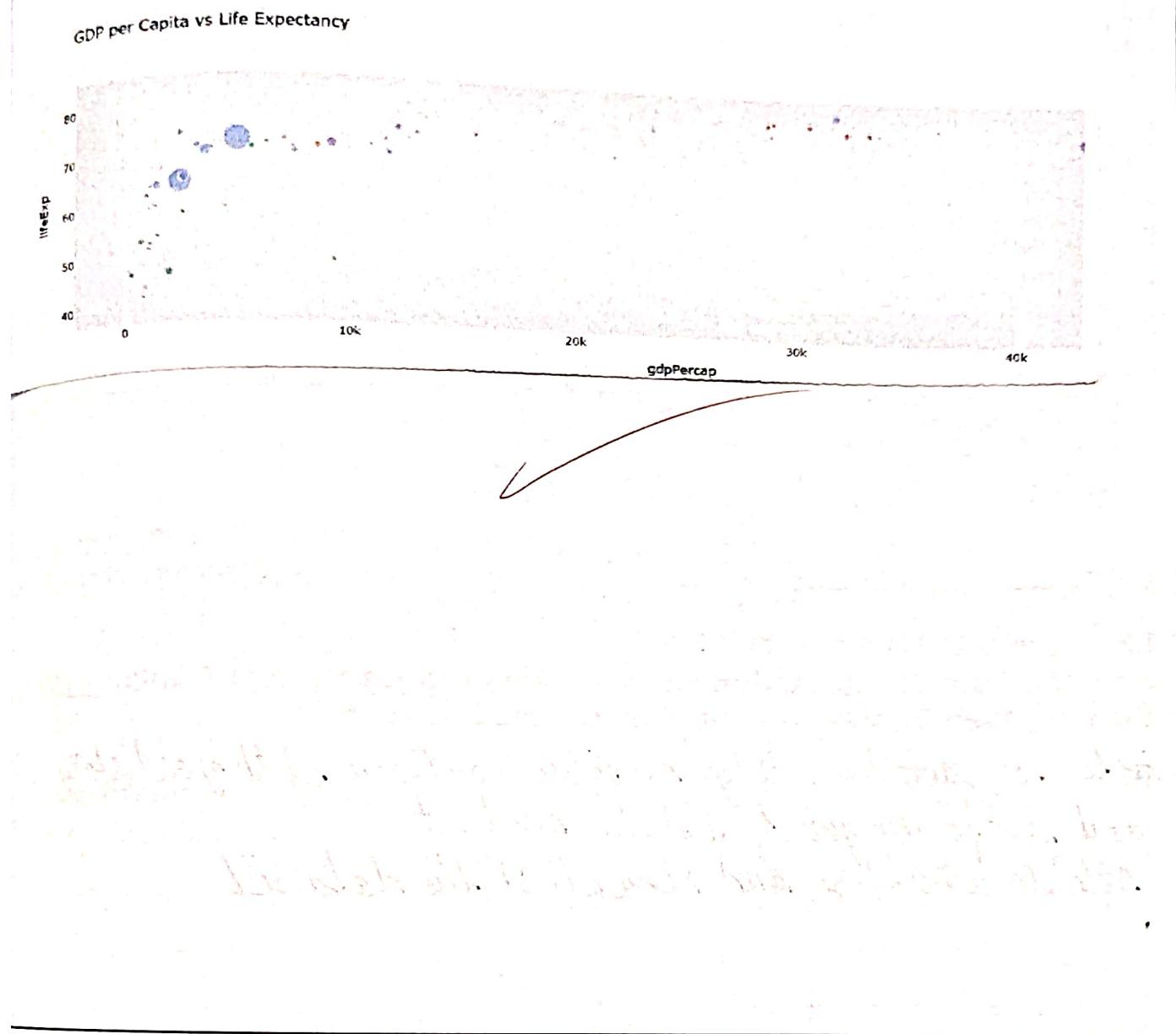
# Layout
app.layout = html.Div([
    html.H1('Dash with Bokeh visualization',
           style={'text-align': 'center'})
])

# Run the app
if __name__ == '__main__':
    app.run_server(port=8057, debug=True)

```

Implementation Phase: Final Output (no error)

GDP per Capita vs Life Expectancy (Scatter Plot)



ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Conceptual Understanding	10	10	
Planning and Execution/ Practical Simulation/ Programming	10	9	
Result and Interpretation	10	10	
Overall Applied and Action Learning	10	10	
	10	9	
	50	47	

Signature of the Faculty
Signature of the Student: Mohammed Shahid

Name : Mohammed Shahid

*As applicable according to the experiment.
Two sheets per experiment. Program No. be used.
Regn. No. : M.Tech 24/01390011

ASSESSMENT

Applied and Action

Experiment	Full Mark	Marks Obtained
Experiment - 1	50	
Experiment - 2	50	
Experiment - 3	50	
Experiment - 4	50	
Experiment - 5	50	
Experiment - 6	50	
Experiment - 7	50	
Experiment - 8	50	
Experiment - 9	50	
Experiment - 10	50	
Experiment - 11	50	

Experiment	Full Mark	Marks Obtained
Experiment - 12	50	
Experiment - 13	50	
Experiment - 14	50	
Experiment - 15	50	
Experiment - 16	50	
Experiment - 17	50	
Experiment - 18	50	
Experiment - 19	50	
Experiment - 20	50	
Average Total	50	

Date: _____

Signature of the student _____

* LEARNING OUTCOMES:

How the Applied and Action Learning encourages Critical Thinking, Problem Solving, Idea Generation and Skill Development etc.?

- Able to gain knowledge on visualization with good story and perform job of a data analyst
- Able to analyze and visualize the dataset.

How the Applied and Action Learning encourages Leadership, Team Work, Reflection and Decision Making Capability etc.?

- Leadership (hands-on experiment) → provides opportunities to lead real-world projects
- Decision making
- Collaborative problem solving

Date: _____

Mohammed Shabir
Signature of the student _____

* One sheet per learning record

COURSE OUTCOMES (COs) ATTAINMENT

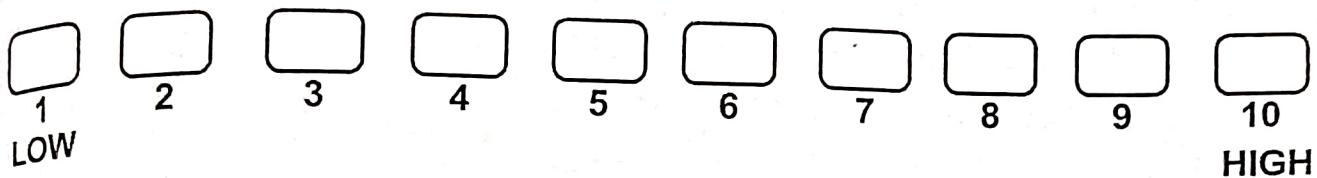
Applied and Action Learning

Expected Course Outcomes (COs):
(Refer to COs Statement in the Syllabus)

Ability to design dashboard

Course Outcomes (COs) Attained:

How would you rate your learning of the subject based on the specified COs?



Learning Gap (If any):

Learning gap refers to the difference between what a student now or can do and what they are expected to know or be able to do at a certain point in their education. It can arise due to various factors such as missed lessons, lack of understanding of key concepts.

Books/Manuals Referred:

Date: _____

Mohammed Shahid
Signature of the Student

Suggestions / Recommendations:

(by the Course Faculty)

e:

Signature of the Faculty

 Page No.

*One sheet per learning record to be used



Centurion UNIVERSITY

*Shaping Lives...
Empowering Communities...*

CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENT ANDHRA PRADESH

Centurion University of Technology and Management,
Vizianagaram, Andhra Pradesh