

Assignment 6

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Div: A

1. Create a pie chart of the popularity of programming languages:

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

Data for the pie chart
languages = ['Java', 'Python', 'PHP', 'JavaScript', 'C#', 'C++']
popularity = [22.2, 17.6, 8.8, 8, 7.7, 6.7]

Creating the pie chart
plt.pie(popularity, labels=languages, autopct='%1.1f%%', startangle=140)
plt.axis('equal') # Equal aspect ratio ensures that pie is drawn as a circle.
plt.show()
```
```

2. Create a pie chart with a title:

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

Data for the pie chart
languages = ['Java', 'Python', 'PHP', 'JavaScript', 'C#', 'C++']
popularity = [22.2, 17.6, 8.8, 8, 7.7, 6.7]
```

```

Creating the pie chart

plt.pie(popularity, labels=languages, autopct='%1.1f%%', startangle=140)

plt.title('Popularity of Programming Languages')

plt.axis('equal') # Equal aspect ratio ensures that pie is drawn as a circle.

plt.show()

...

```

3. Create a pie chart with multiple wedges:

```

```python

import matplotlib.pyplot as plt

# Data for the pie chart

languages = ['Java', 'Python', 'PHP', 'JavaScript', 'C#', 'C++']

popularity = [22.2, 17.6, 8.8, 8, 7.7, 6.7]

# Creating the pie chart with multiple wedges exploded

explode = (0.1, 0, 0, 0, 0, 0) # "explode" the 1st slice (Java)

plt.pie(popularity, labels=languages, autopct='%1.1f%%', explode=explode,
startangle=140)

plt.title('Popularity of Programming Languages')

plt.axis('equal') # Equal aspect ratio ensures that pie is drawn as a circle.

plt.show()

...

```

4. Draw a scatter plot with empty circles with random distribution:

```
```python
import matplotlib.pyplot as plt
import numpy as np

Random distribution data
x = np.random.rand(100)
y = np.random.rand(100)

Creating the scatter plot with empty circles
plt.scatter(x, y, facecolors='none', edgecolors='b')
plt.title('Scatter plot with random distribution')
plt.show()
```
```

5. Draw a scatter plot comparing Mathematics and Science marks:

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

Data for the scatter plot
math_marks = [88, 92, 80, 89, 100, 80, 60, 100, 80, 34]
science_marks = [35, 79, 79, 48, 100, 88, 32, 45, 20, 30]
marks_range = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100]

Creating the scatter plot
plt.scatter(math_marks, science_marks, color='r')
```

```
plt.xlabel('Math Marks')
plt.ylabel('Science Marks')
plt.title('Comparison of Math and Science Marks')
plt.show()
` ``
```