matplotlib (Data Visualization)

```python
from scipy import linalg
#inverse of a matrix

a = np.array([[1,2],[3,4]])
b = linalg.inv (a)

print (b)

[[-2.    1. ]
 [ 1.5 -0.5]]
```
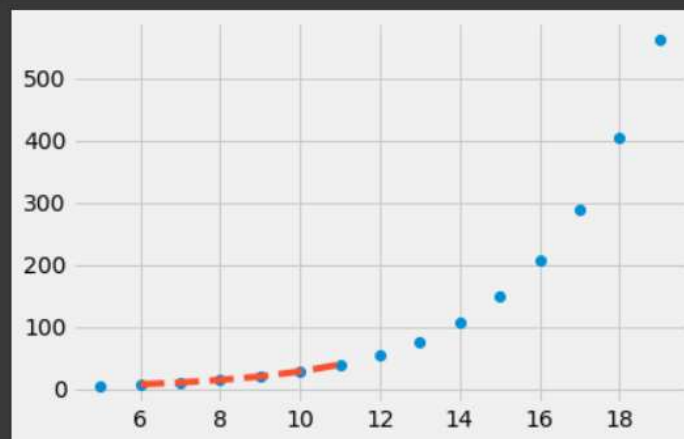
Linear Algebra

```python
import matplotlib.pyplot as plt
import numpy as np
from scipy import interpolate
x = np.arange(5, 20)
y = np.exp(x/3.0)
f = interpolate.interp1d(x, y)
x1 = np.arange(6, 12)
y1 = f(x1)
plt.plot(x, y, 'o', x1, y1, '--')
plt.show()
```
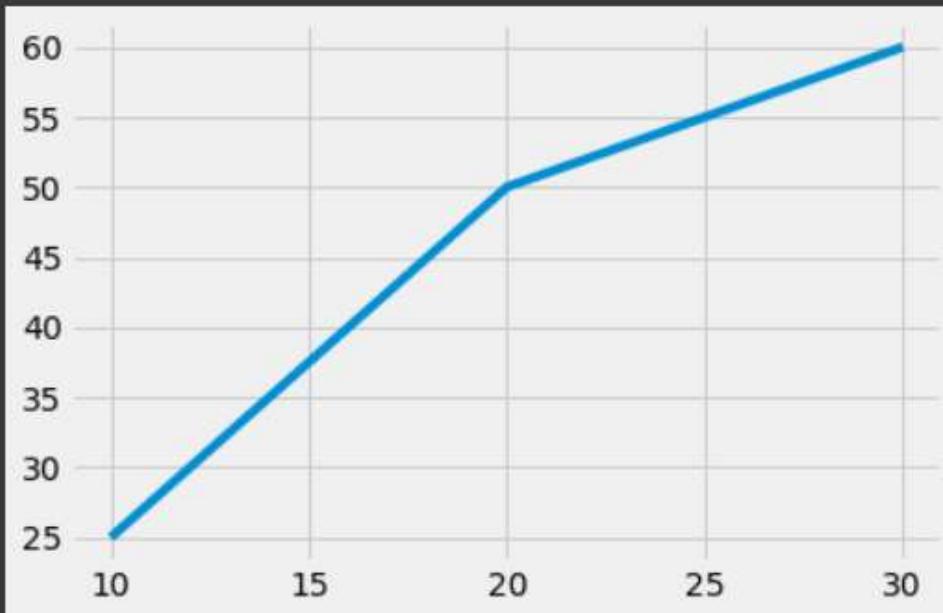

Interpolation

matplotlib (Data Visualization)

```python
from matplotlib import pyplot as plt

plt.plot([10, 20, 30],[25, 50, 60])

plt.show()
```
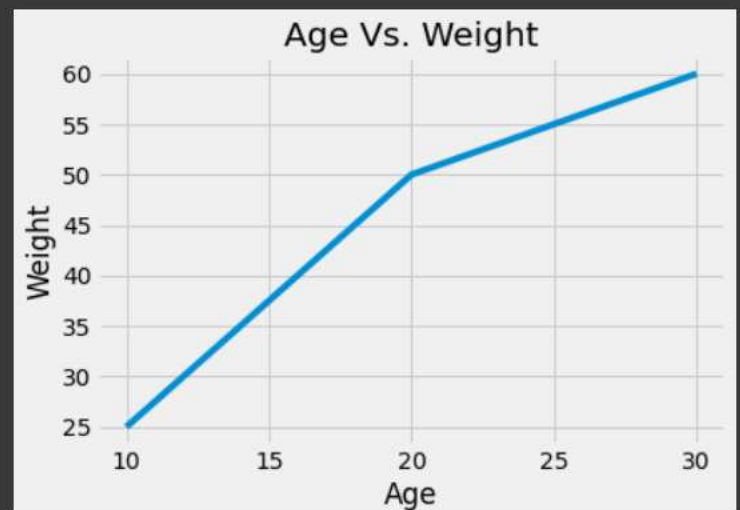


```python
from matplotlib import pyplot as plt

x = [10, 20, 30]
y = [25, 50, 60]

plt.plot(x, y)
plt.title('Age Vs. Weight')
plt.xlabel('Age')
plt.ylabel('Weight')

plt.show()
```
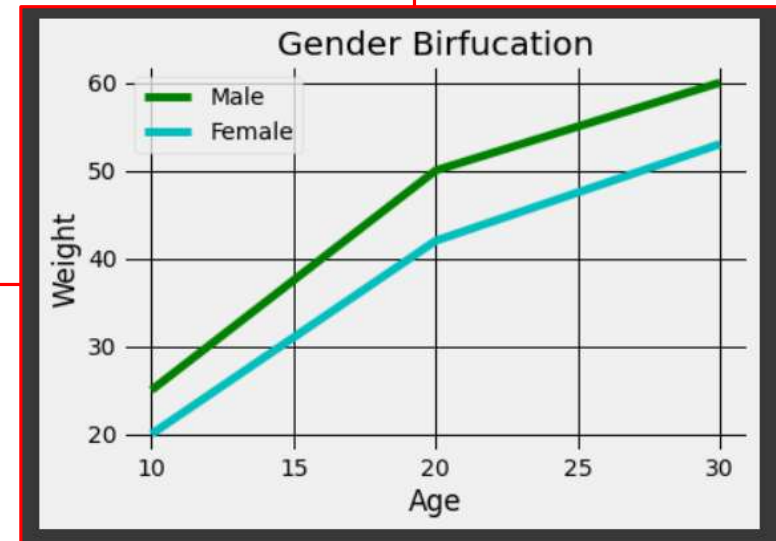
```python
from matplotlib import pyplot as plt
male_age = [10, 20, 30]
male_weight = [25, 50, 60]
female_age = [10, 20, 30]
female_weight = [20, 42, 53]
plt.plot(male_age, male_weight, 'g', label='Male', linewidth=5)
plt.plot(female_age, female_weight, 'c', label='Female', linewidth=5)
plt.title('Gender Birfucation')
plt.xlabel('Age')
plt.ylabel('Weight')
plt.legend()
plt.grid(True, color='k')
plt.show()
```
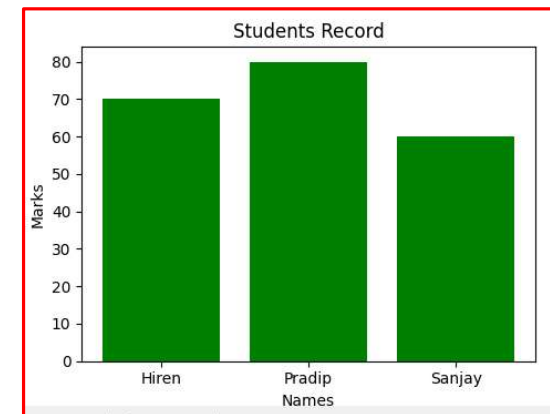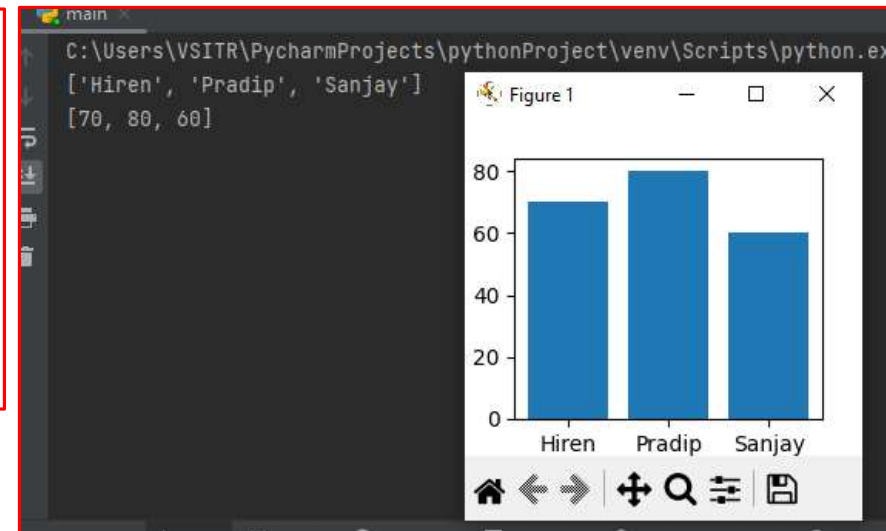
matplotlib (Data Visualization)

```python
import matplotlib.pyplot as plt
student = {"Hiren":70, "Pradip": 80, "Sanjay":60}
names = list(student.keys())
marks = list(student.values())
print(names)
print(marks)
plt.bar(names, marks)
plt.show()
```

```python
plt.bar(names, marks, color='green')
plt.title("Students Record")
plt.xlabel("Names")
plt.ylabel("Marks")
```

```python
ALSO TRY…
plt.barh(names, marks, color='green')
plt.grid(true)
```
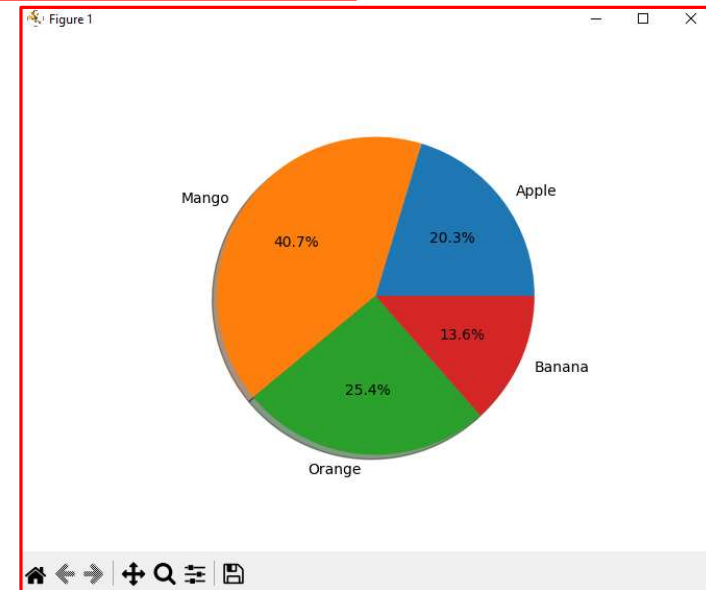
matplotlib (Data Visualization)

```python
from matplotlib import pyplot as plt

fruit_name = ["Apple", "Mango", "Orange", "Banana"]
fruit_cost = [60, 120, 75, 40]

plt.pie(fruit_cost, labels=fruit_name, autopct='%0.1f%%', shadow=True)
plt.show()
```

```python
import matplotlib.pyplot as plt

male_age = [10, 20, 30]
male_weight = [25, 50, 60]

plt.xlabel('Age')
plt.ylabel('Weight')
plt.plot(male_age, male_weight,
color='g', label='Line Chart')
plt.show()

plt.xlabel('Age')
plt.ylabel('Weight')
plt.bar(male_age, male_weight,
color='g', label='Bar Chart')
plt.show()

plt.xlabel('Age')
plt.ylabel('Weight')
plt.scatter(male_age, male_weight,
color='g', label='Scatter Chart')
plt.show()

plt.pie(male_age)
plt.title('Pie Chart')
plt.show()
```