

220962050_Arhaan_Lab02

August 2, 2024

```
[ ]: import matplotlib.pyplot as plt
import numpy as np
import pandas as pd
import math
```

0.1 Lab Questions

```
[ ]: #! Question 1

# Create a figure object
fig = plt.figure()

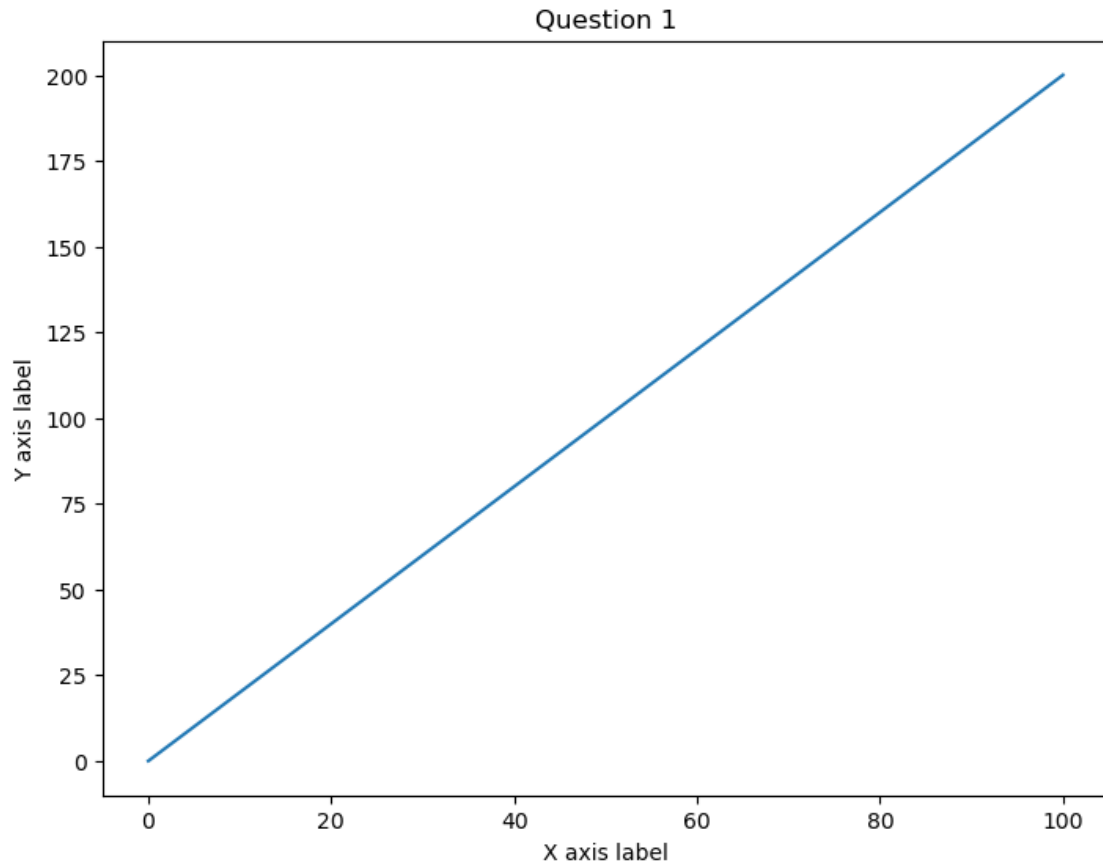
# Add an axis to the figure canvas at [0,0,1,1]
ax = fig.add_axes([0, 0, 1, 1])

# Example data for plotting
x = [0 , 100]
y = [0 , 200]

# Plot (x, y) on the axis
ax.plot(x, y)

# Set labels and title
ax.set_xlabel('X axis label')
ax.set_ylabel('Y axis label')
ax.set_title('Question 1')

# Display the plot
plt.show()
```



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[ ]: #! Question 2

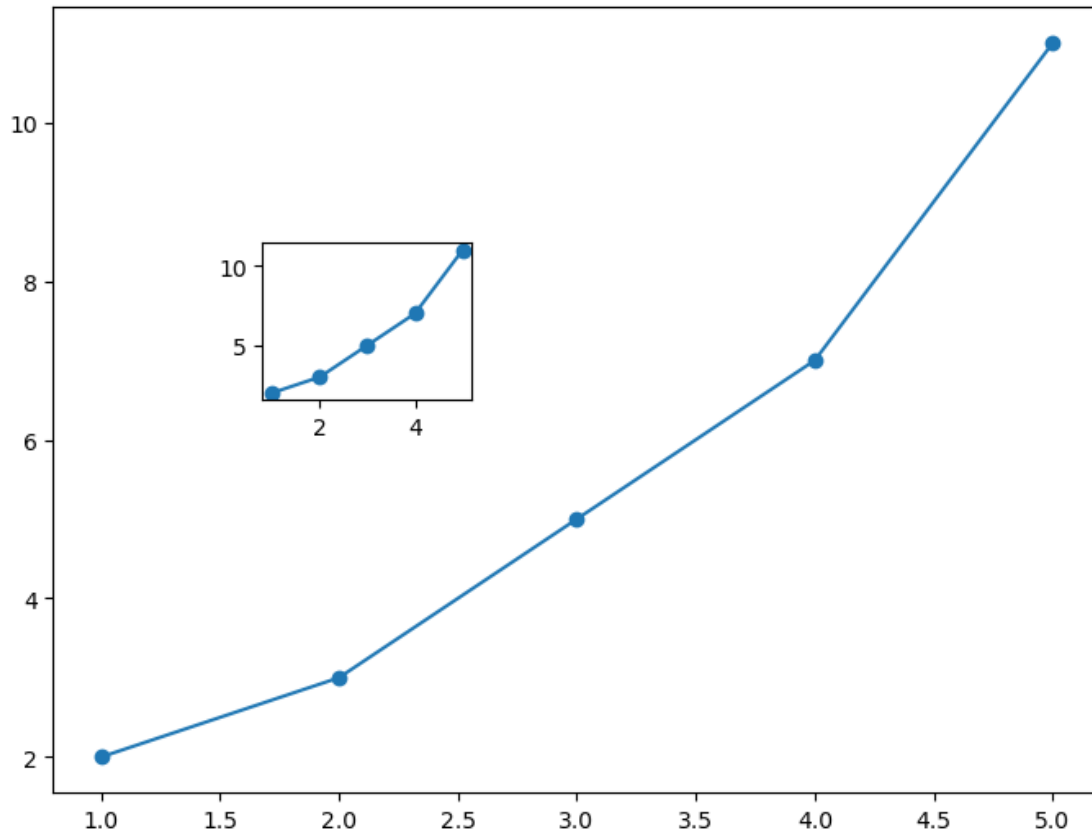
fig = plt.figure()

ax1 = fig.add_axes([0, 0, 1, 1])
ax2 = fig.add_axes([0.2, 0.5, 0.2, 0.2])

x = [1, 2, 3, 4, 5]
y = [2, 3, 5, 7, 11]

ax1.plot(x, y, 'o-', label='Plot on ax1')
ax2.plot(x, y, 'o-', label='Plot on ax2')

plt.show()
```



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[ ]: df = pd.read_csv('company_sales_data.csv')
df.head()
```

```
[ ]:      month_number  facecream  facewash  toothpaste  bathingsoap  shampoo  \
0             1         2500      1500         5200         9200        1200
1             2         2630      1200         5100         6100        2100
2             3         2140      1340         4550         9550        3550
3             4         3400      1130         5870         8870        1870
4             5         3600      1740         4560         7760        1560

      moisturizer  total_units  total_profit
0           1500         21100         211000
1           1200         18330         183300
2           1340         22470         224700
3           1130         22270         222700
4           1740         20960         209600
```

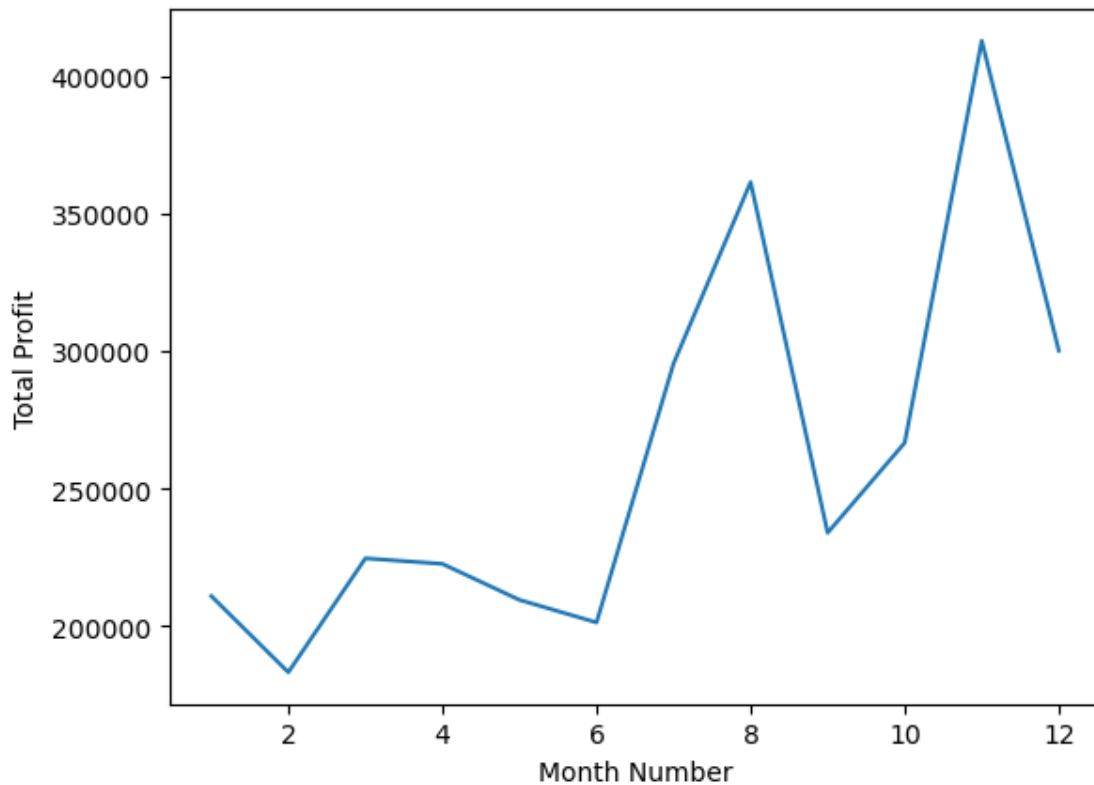
```
[ ]: #! Question3

x = df['month_number']
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y = df['total_profit']
plt.xlabel('Month Number')
plt.ylabel('Total Profit')
plt.plot(x,y)
plt.show()

```



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[ ]: #! Question 4
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profitList = df ['total_profit'].tolist()
monthList = df ['month_number'].tolist()

plt.plot(monthList, profitList, label = 'Profit data of last year',
         color='r', marker='o', markerfacecolor='k',
         linestyle='--', linewidth=2)

plt.xlabel('Month Number')
plt.ylabel('Profit in dollar')
plt.legend(loc='lower right')
plt.title('Company Sales data of last year')
plt.xticks(monthList)
plt.yticks([100000, 200000, 300000, 400000, 500000])

```

```
plt.show()
```

