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UNIVERSITY OF MICHIGAN

Discussion 13: Matplotlib

SI 206: Data-Oriented Programming

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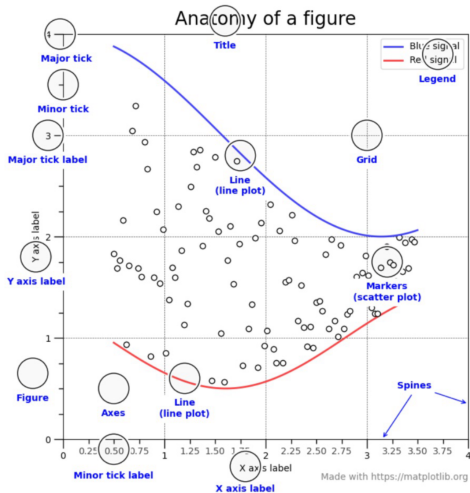School of Information
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SI 206
Discussion 13

Tips
Subplot
Multiple Lines
Practice Problems

Tips

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Anatomy of a figure

- Read the lecture slides and documentation for help
  https://matplotlib.org/stable/tutorials/pyplot.html
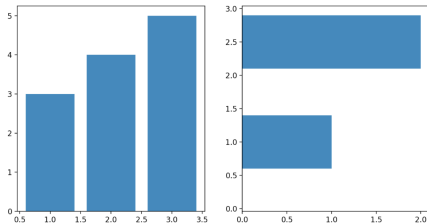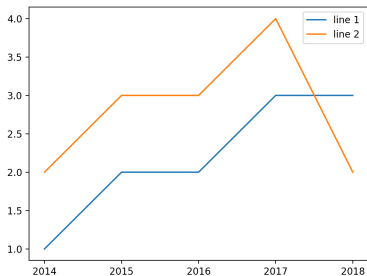
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Subplot

```python
1  import matplotlib.pyplot as plt
2
3  fig = plt.figure(figsize=(10, 5))
4  # 1 row 2 columns 1st chart
5  ax1 = fig.add_subplot(121)
6  # 1 row 2 columns 2nd chart
7  ax2 = fig.add_subplot(122)
8
9  ax1.bar([1, 2, 3], [3, 4, 5])
10 ax2.barh([0.5, 1, 2.5], [0, 1, 2])
11
12 plt.show()
```

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Multiple Lines

```python
import matplotlib.pyplot as plt

x = ['2014', '2015', '2016', '2017',
 ↪ '2018']
y1 = [1,2,2,3,3]
y2 = [2,3,3,4,2]

# add another plot call with more data
plt.plot(x, y1, label='line 1')
plt.plot(x, y2, label='line 2')

plt.legend()
plt.show()
```

Visualize GitHub Coding Language data

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Task

❶ Generate one plot with two subplots side by side

- Left subplots: a horizontal bar chart. Coding Language v.s. Number of Repo
- Right subplot: a bar chart. Each portion represents a coding language.

❷ Generate a multi-line chart. Year v.s. Number of Issues (by languages)