

Improving Plot Aesthetics

Hiding Tick Marks, axis-labels and Displaying Selected axis-label values:

```
fig = plt.figure()

plt.plot(women_degrees['Year'], women_degrees['Biology'], label='Women', c='blue')
plt.plot(women_degrees['Year'], 100 - women_degrees['Biology'], c='green', label='Men')

# ax./plt.tick_params (loc= 'off') will hide the ticks
plt.tick_params(top = "off", bottom = 'off', right = 'off', left = 'off', labelbottom = False)
plt.yticks([30, 70]) # Or axes.set_yticks([30, 70])

plt.title("Percentage of Biology Degrees Awarded By Gender")
plt.legend(loc="upper right")
plt.show()
```

Hiding Spines:

```
fig, ax = plt.subplots()
ax.plot(women_degrees['Year'], women_degrees['Biology'], label='Women')
ax.plot(women_degrees['Year'], 100-women_degrees['Biology'], label='Men')
ax.tick_params(bottom="off", top="off", left="off", right="off")

# axes.spines(loc).set_visible(False) will hide the borders.spines of the axes and plot
ax.spines['right'].set_visible(False)
ax.spines['top'].set_visible(False)
ax.spines['bottom'].set_visible(False)
ax.spines['left'].set_visible(False)

# Another Way to hide spines in one go
for key,spine in ax.spines.items():
    spine.set_visible(False)

ax.legend(loc='upper right')
ax.set_title('Percentage of Biology Degrees Awarded By Gender')
plt.show()
```

Color, Layout and Annotations

Setting Color of Line Using RGB:

```
fig = plt.figure(figsize=(12, 12))

for sp in range(0,4):
    ax = fig.add_subplot(2,2,sp+1)
    # The color for each line is assigned here.
    cb_dark_blue = (0/255, 107/255, 164/255)
    cb_orange = (255/255, 128/255, 14/255)
    ax.plot(women_degrees['Year'], women_degrees[major_cats[sp]], c=cb_dark_blue, label='Women')
    ax.plot(women_degrees['Year'], 100-women_degrees[major_cats[sp]], c=cb_orange, label='Men')
    for key,spine in ax.spines.items():
        spine.set_visible(False)
    ax.set_xlim(1968, 2011)
    ax.set_ylim(0,100)
    ax.set_title(major_cats[sp])
    ax.tick_params(bottom="off", top="off", left="off", right="off")

plt.legend(loc='upper right')
plt.show()
```

Setting Line Width:

```
cb_dark_blue = (0/255, 107/255, 164/255)
cb_orange = (255/255, 128/255, 14/255)

fig = plt.figure(figsize=(12, 12))

for sp in range(0,4):
    ax = fig.add_subplot(2,2,sp+1)
    # Set the line width when specifying how each line should look.
    ax.plot(women_degrees['Year'], women_degrees[major_cats[sp]], c=cb_dark_blue, label='Women',
            linewidth=3)
```

```

ax.plot(women_degrees['Year'], 100-women_degrees[major_cats[sp]], c=cb_orange, label='Men',
linewidth=3)
for key,spine in ax.spines.items():
    spine.set_visible(False)
ax.set_xlim(1968, 2011)
ax.set_ylim(0,100)
ax.set_title(major_cats[sp])
ax.tick_params(bottom="off", top="off", left="off", right="off")

plt.legend(loc='upper right')
plt.show()

```

Annotations in Matplotlib:

```

fig = plt.figure(figsize=(18, 3))

for sp in range(0,6):
    ax = fig.add_subplot(1,6,sp+1)
    ax.plot(women_degrees['Year'], women_degrees[stem_cats[sp]], c=cb_dark_blue, label='Women',
linewidth=3)
    ax.plot(women_degrees['Year'], 100-women_degrees[stem_cats[sp]], c=cb_orange, label='Men',
linewidth=3)

# axes.text(x-coordinate, y-coordinate, string_annotation)

if sp == 0:
    ax.text(2005, 87, "Men")
    ax.text(2002, 8, "Women")
if sp == 5:
    ax.text(2005, 62, "Men")
    ax.text(2001, 35, "Women")

for key,spine in ax.spines.items():
    spine.set_visible(False)
ax.set_xlim(1968, 2011)
ax.set_ylim(0,100)
ax.set_title(stem_cats[sp])
ax.tick_params(bottom="off", top="off", left="off", right="off")
plt.show()

```

Adding Lines, Exporting to a File

Adding a Horizontal Line and Exporting Plot as an Image:

```

stem_cats = ['Engineering', 'Computer Science', 'Psychology', 'Biology',
             'Physical Sciences', 'Math and Statistics']

fig = plt.figure(figsize=(15, 18))

for sp in range(6):
    ax = fig.add_subplot(6, 3, (sp*3)+1)
    ax.plot(women_degrees['Year'], women_degrees[stem_cats[sp]], c=cb_dark_blue, label='Women',
            linewidth=3)
    ax.plot(women_degrees['Year'], 100-women_degrees[stem_cats[sp]], c=cb_orange, label='Men',
            linewidth=3)
    for k, v in ax.spines.items():
        spine.set_visible(False)
    ax.set_xlim(1968, 2011)
    ax.set_ylim(0,100)
    ax.set_title(stem_cats[sp])
    ax.set_yticks([0,100])

    # Axes.axhline (Adds a Horizontal Line, and alpha is the transparency level (0 < alpha < 1) )
    ax.axhline(50, c=(171/255, 171/255, 171/255), alpha=0.3)
    ax.tick_params(bottom=False, top=False, left=False, right=False, labelbottom=False)

    if sp == 0:
        ax.text(2006, 87, 'Men')
        ax.text(2003, 8, 'Women')
    elif sp == 5:
        ax.text(2006, 62, 'Men')
        ax.text(2003, 35, 'Women')
        ax.tick_params(labelbottom=True)

# plt.savefig(<filename>) saves file to the same folder where notebook is located
plt.savefig('gender_degrees.png')
plt.show()

```