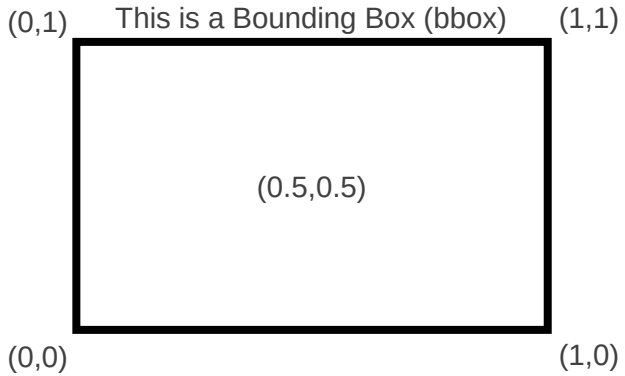
bbox_to_anchor and loc in plt.legend()



Location String (loc)	Location Code
'best' (Axes only)	0
'upper right'	1
'upper left'	2
'lower left'	3
'lower right'	4
'right'	5
'center left'	6
'center right'	7
'lower center'	8
'upper center'	9
'center'	10

Explanation:
For every plot, there is a bounding box. Think of a bounding box as the edges of a plot. The *corners* of, and *any position inside* a bounding box is defined by (x,y) coordinates.

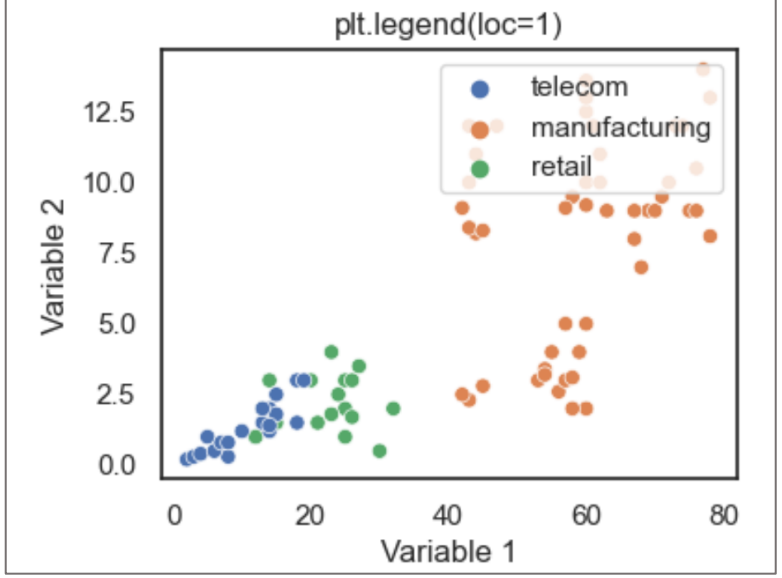
Explanation:
When used without bbox_to_anchor in plt.legend(), the loc argument positions a legend **inside** the bounding box.

Using loc alone has one limitation – the legend may obscure parts of a plot, or cover selected observations completely (depending on the chart)

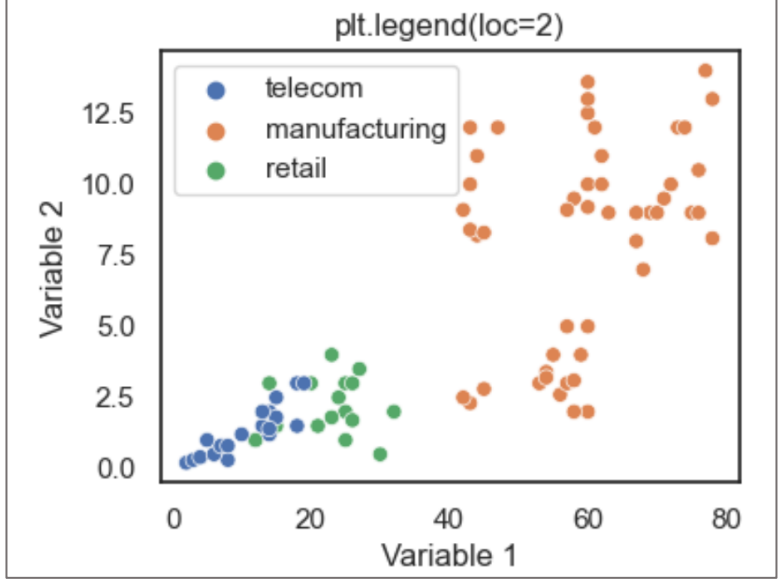
bbox_to_anchor and loc in plt.legend()

When used without bbox_to_anchor in plt.legend(), the loc argument places a legend **inside** the bounding box (refer to previous slide on loc string or code). See examples below – try them your own

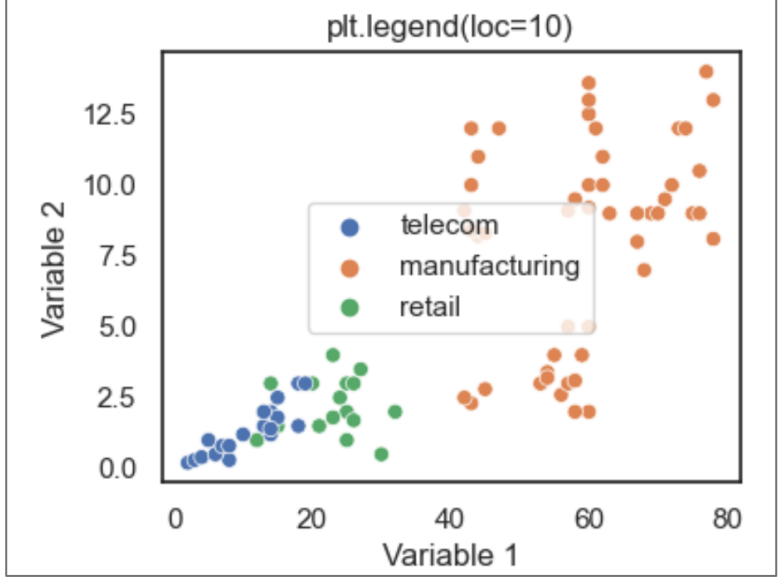
```
sns.set(rc={"figure.figsize":(4, 3)}, style="white")
sns.scatterplot(x='marketcap', y='anrevenue',
                hue='sector', data=df)
plt.legend(loc=1) # upper right
plt.title("plt.legend(loc=1)")
plt.xlabel("Variable 1")
plt.ylabel("Variable 2")
plt.show()
```




```
sns.set(rc={"figure.figsize":(4, 3)}, style="white")
sns.scatterplot(x='marketcap', y='anrevenue',
                hue='sector', data=df)
plt.legend(loc=2) # upper left
plt.title("plt.legend(loc=2)")
plt.xlabel("Variable 1")
plt.ylabel("Variable 2")
plt.show()
```



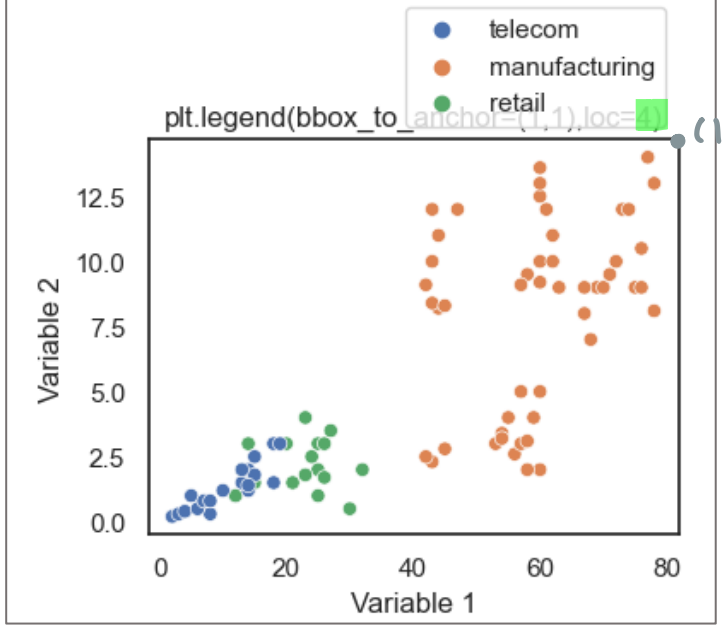

```
sns.set(rc={"figure.figsize":(4, 3)}, style="white")
sns.scatterplot(x='marketcap', y='anrevenue',
                hue='sector', data=df)
plt.legend(loc=10) # center
plt.title("plt.legend(loc=10)")
plt.xlabel("Variable 1")
plt.ylabel("Variable 2")
plt.show()
```



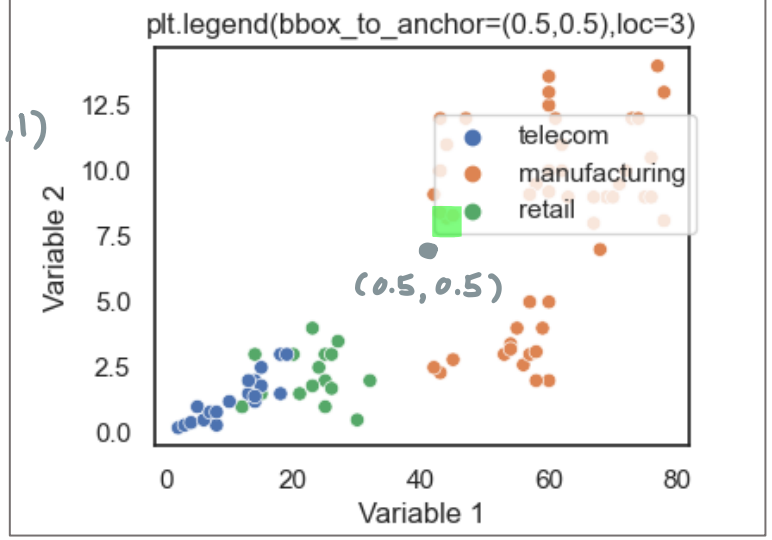
bbox_to_anchor and loc in plt.legend()

To place a legend **outside** the bounding box, or at a **custom location**, we use both arguments: bbox_to_anchor & loc. In this case, the loc argument may be interpreted as "which corner of the legend shall be placed at, given the 2-tuple (x,y) coordinates". See examples below – try them on your own

```
sns.set(rc={"figure.figsize":(4, 3)}, style="white")
sns.scatterplot(x='marketcap', y='anrevenue',
                hue='sector', data=df)
# lower right corner of legend is anchored to (1,1)
# of bounding box
plt.legend(bbox_to_anchor=(1,1),loc=4)
plt.title("plt.legend(bbox_to_anchor=(1,1),loc=4)")
plt.xlabel("Variable 1")
plt.ylabel("Variable 2")
plt.show()
```




```
sns.set(rc={"figure.figsize":(4, 3)}, style="white")
sns.scatterplot(x='marketcap', y='anrevenue',
                hue='sector', data=df)
# lower left corner of legend is anchored to (0.5,0.5)
# of bounding box
plt.legend(bbox_to_anchor=(0.5,0.5),loc=3)
plt.title("plt.legend(bbox_to_anchor=(0.5,0.5),loc=3)")
plt.xlabel("Variable 1")
plt.ylabel("Variable 2")
plt.show()
```




```
sns.set(rc={"figure.figsize":(4, 3)}, style="white")
sns.scatterplot(x='marketcap', y='anrevenue',
                hue='sector', data=df)
# upper left corner of legend is anchored to (1,0)
# of bounding box
plt.legend(bbox_to_anchor=(1,0),loc=2)
plt.title("plt.legend(bbox_to_anchor=(1,0),loc=2)")
plt.xlabel("Variable 1")
plt.ylabel("Variable 2")
plt.show()
```