Mini Project – 2

Name : Umesh Padul

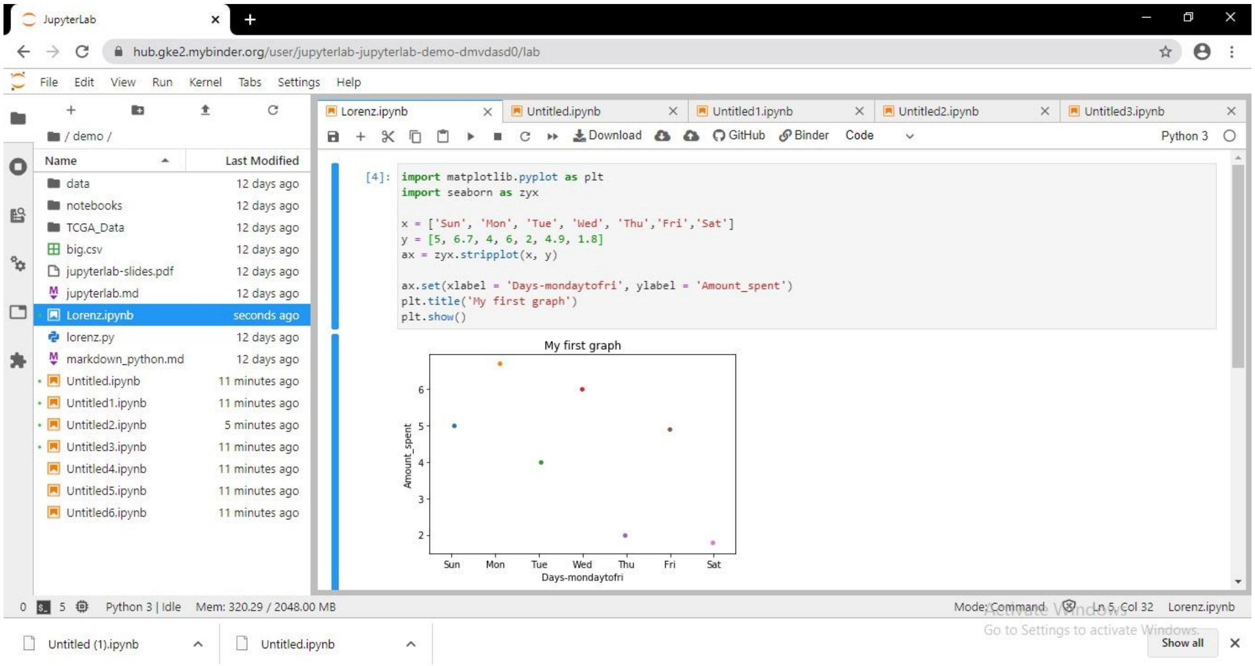
Roll No. : COTB45

```
import matplotlib.pyplot as plt import
seaborn as zyx

x = ['Sun', 'Mon', 'Tue', 'Wed', 'Thu','Fri','Sat'] y
= [5, 6.7, 4, 6, 2, 4.9, 1.8]

ax = zyx.stripplot(x, y)

ax.set(xlabel = 'Days-mondaytofri', ylabel = 'Amount_spent')
plt.title('My first graph') plt.show()
```



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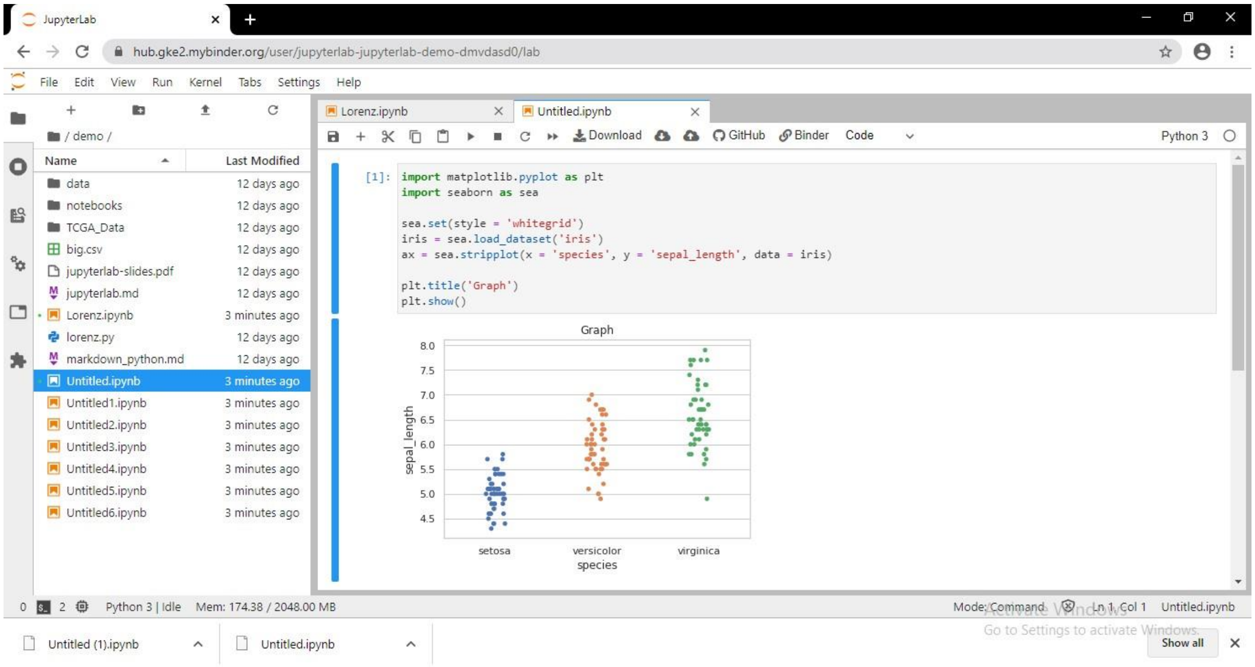
```
[4]: import matplotlib.pyplot as plt
     import seaborn as zyx

     x = ['Sun', 'Mon', 'Tue', 'Wed', 'Thu','Fri','Sat']
     y = [5, 6.7, 4, 6, 2, 4.9, 1.8]
     ax = zyx.stripplot(x, y)

     ax.set(xlabel = 'Days-mondaytofri', ylabel = 'Amount_spent')
     plt.title('My first graph')
     plt.show()
```

```
import seaborn as sea
import matplotlib.pyplot as plt


sea.set(style = 'whitegrid') iris
= sea.load_dataset('iris')
ax = sea.stripplot(x = 'species', y = 'sepal_length', data = iris)

plt.title('Graph') plt.show()
```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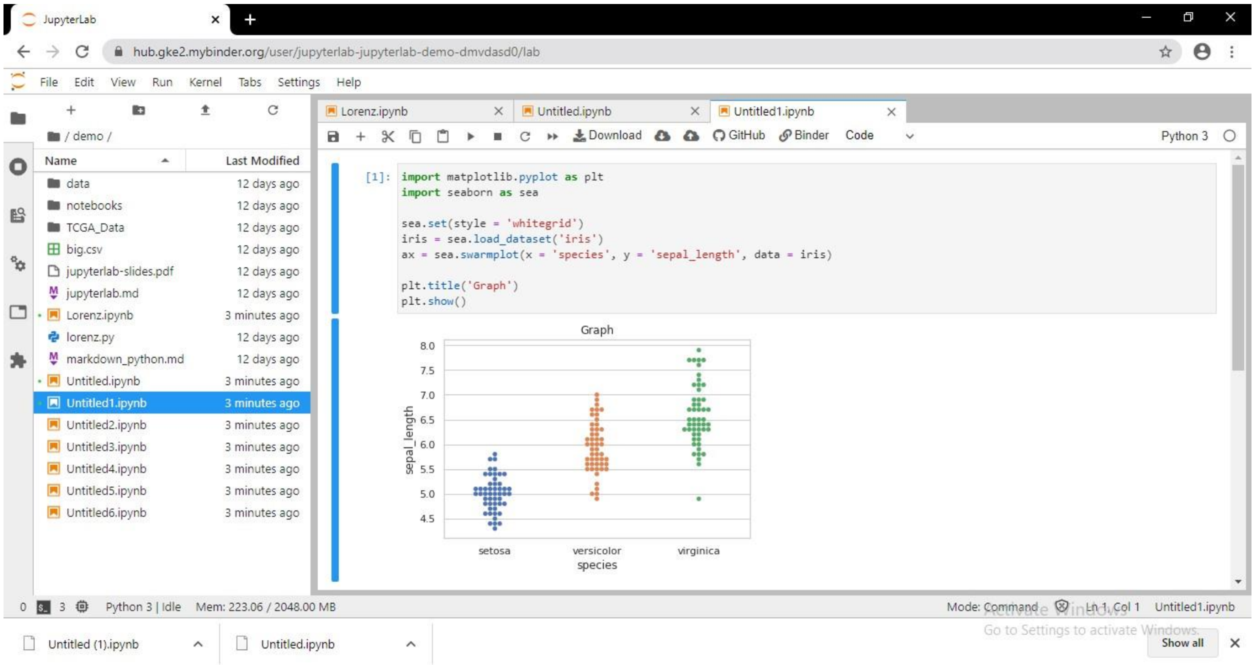
```
[1]: import matplotlib.pyplot as plt
     import seaborn as sea

     sea.set(style = 'whitegrid')
     iris = sea.load_dataset('iris')
     ax = sea.stripplot(x = 'species', y = 'sepal_length', data = iris)

     plt.title('Graph')
     plt.show()
```

```
import seaborn as sea


sea.set(style = 'whitegrid') iris
= sea.load_dataset('iris')
ax = sea.swarmplot(x = 'species', y = 'sepal_length', data = iris)
```

import matplotlib.pyplot as plt

plt.title('Graph') plt.show()



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```
[1]: import matplotlib.pyplot as plt
     import seaborn as sea

     sea.set(style = 'whitegrid')
     iris = sea.load_dataset('iris')
     ax = sea.swarmplot(x = 'species', y = 'sepal_length', data = iris)

     plt.title('Graph')
     plt.show()
```

x = [1,2,3] y

= [2,4,1]

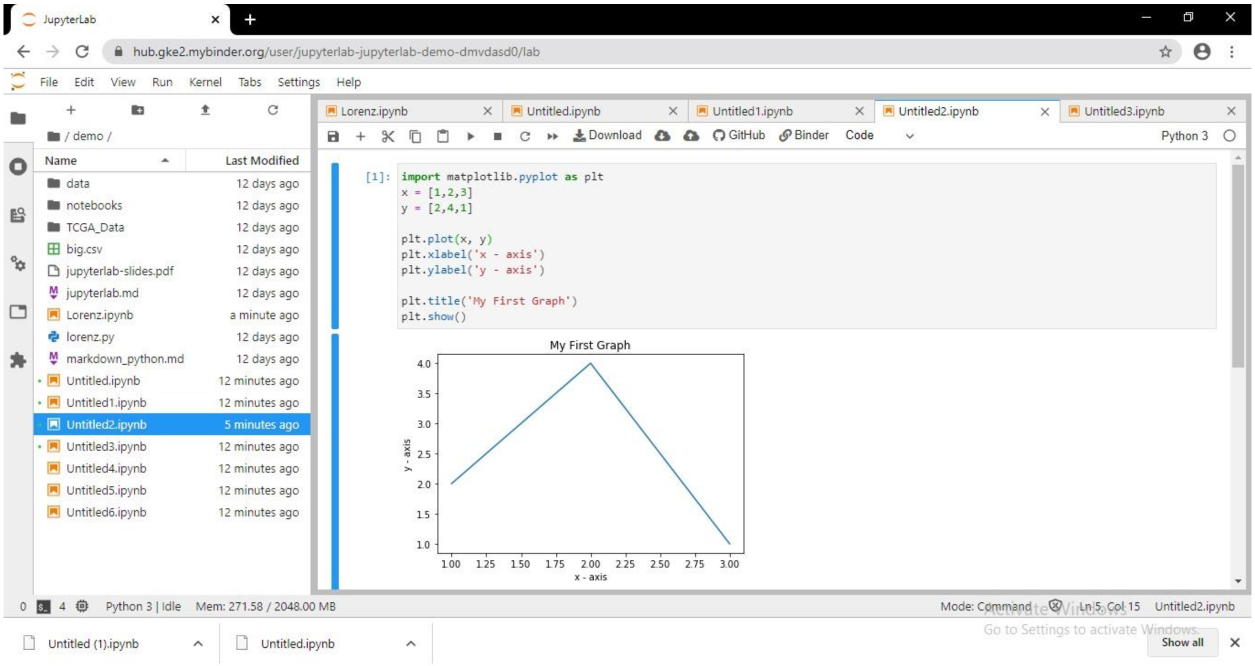
plt.plot(x, y)

plt.xlabel('x - axis') plt.ylabel('y

- axis')

```
import matplotlib.pyplot as plt

plt.title('My First Graph') plt.show()
```



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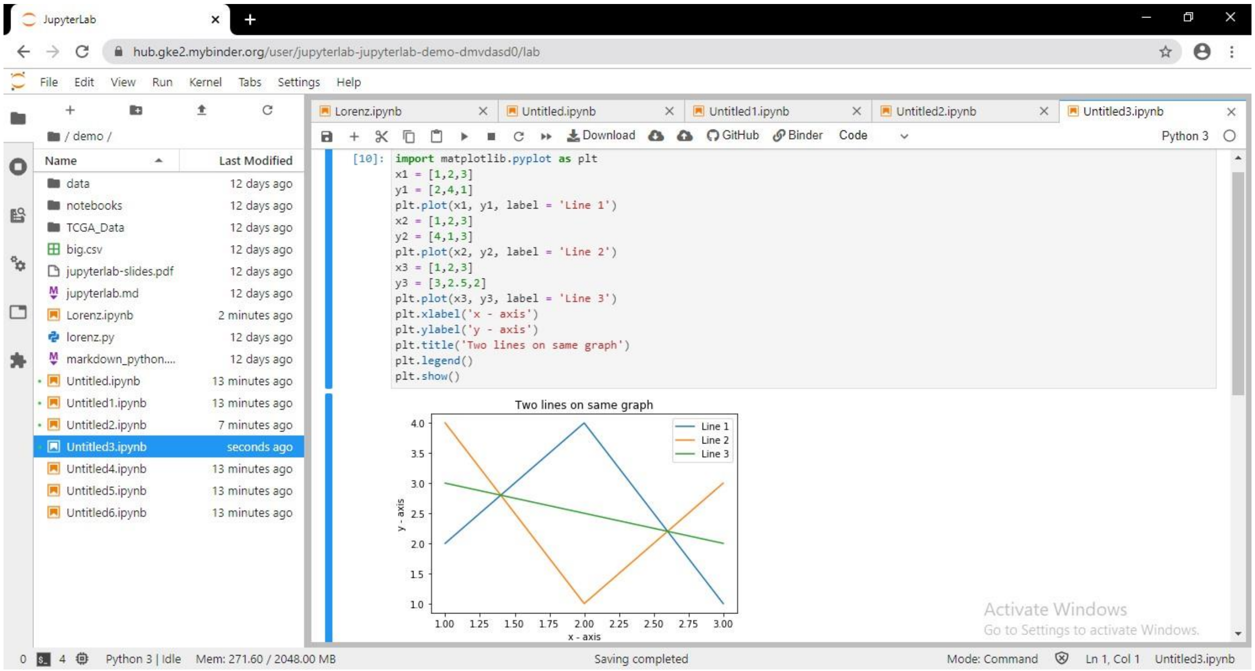
```
[1]: import matplotlib.pyplot as plt
     x = [1,2,3]
     y = [2,4,1]

     plt.plot(x, y)
     plt.xlabel('x - axis')
     plt.ylabel('y - axis')

     plt.title('My First Graph')
     plt.show()
```

```
x1 = [1,2,3] y1
= [2,4,1]
plt.plot(x1, y1, label = 'Line 1')
x2 = [1,2,3] y2 = [4,1,3]
plt.plot(x2, y2, label = 'Line 2')
x3 = [1,2,3] y3 = [3,2.5,2]
plt.plot(x3, y3, label = 'Line 3')
plt.xlabel('x - axis') plt.ylabel('y
- axis')
plt.title('Two lines on same graph')
plt.legend() plt.show()
```

import matplotlib.pyplot as plt



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```
[10]: import matplotlib.pyplot as plt
      x1 = [1,2,3]
      y1 = [2,4,1]
      plt.plot(x1, y1, label = 'Line 1')
      x2 = [1,2,3]
      y2 = [4,1,3]
      plt.plot(x2, y2, label = 'Line 2')
      x3 = [1,2,3]
      y3 = [3,2.5,2]
      plt.plot(x3, y3, label = 'Line 3')
      plt.xlabel('x - axis')
      plt.ylabel('y - axis')
      plt.title('Two lines on same graph')
      plt.legend()
      plt.show()
```

import matplotlib.pyplot as plt import

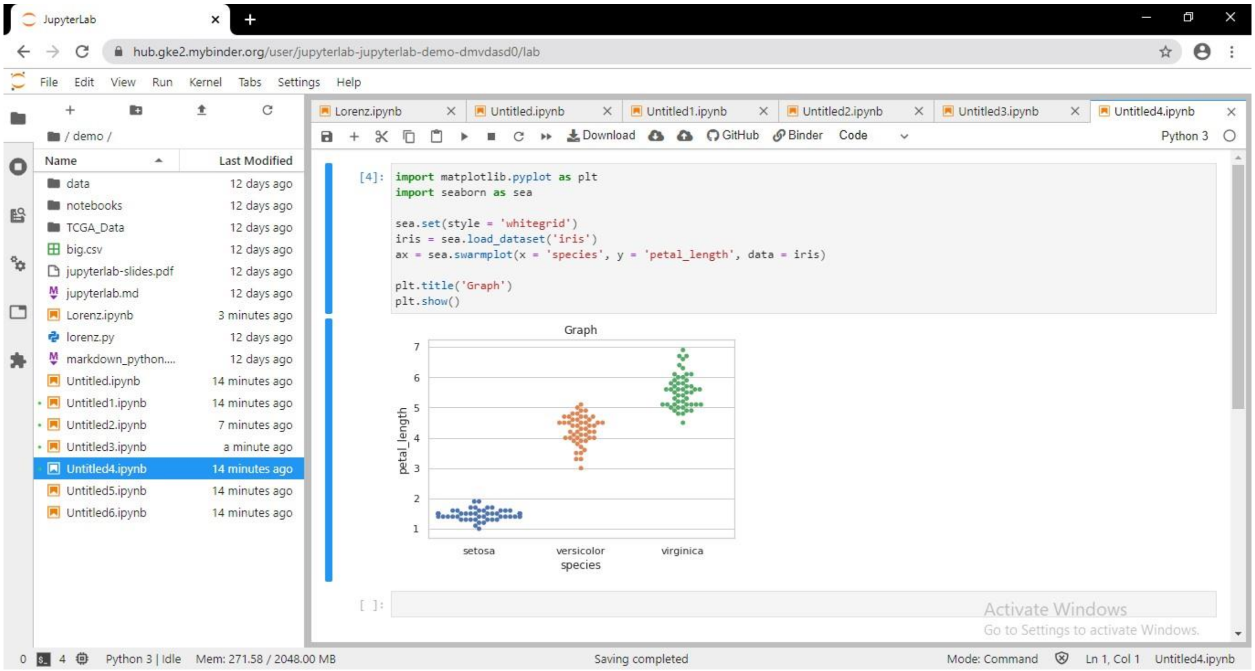
seaborn as sea

sea.set(style = 'whitegrid') iris

= sea.load_dataset('iris')

ax = sea.swarmplot(x = 'species', y = 'petal_length', data = iris)

plt.title('Graph') plt.show()



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```
[4]: import matplotlib.pyplot as plt
     import seaborn as sea

     sea.set(style = 'whitegrid')
     iris = sea.load_dataset('iris')
     ax = sea.swarmplot(x = 'species', y = 'petal_length', data = iris)

     plt.title('Graph')
     plt.show()
```

```
[ ]:
```

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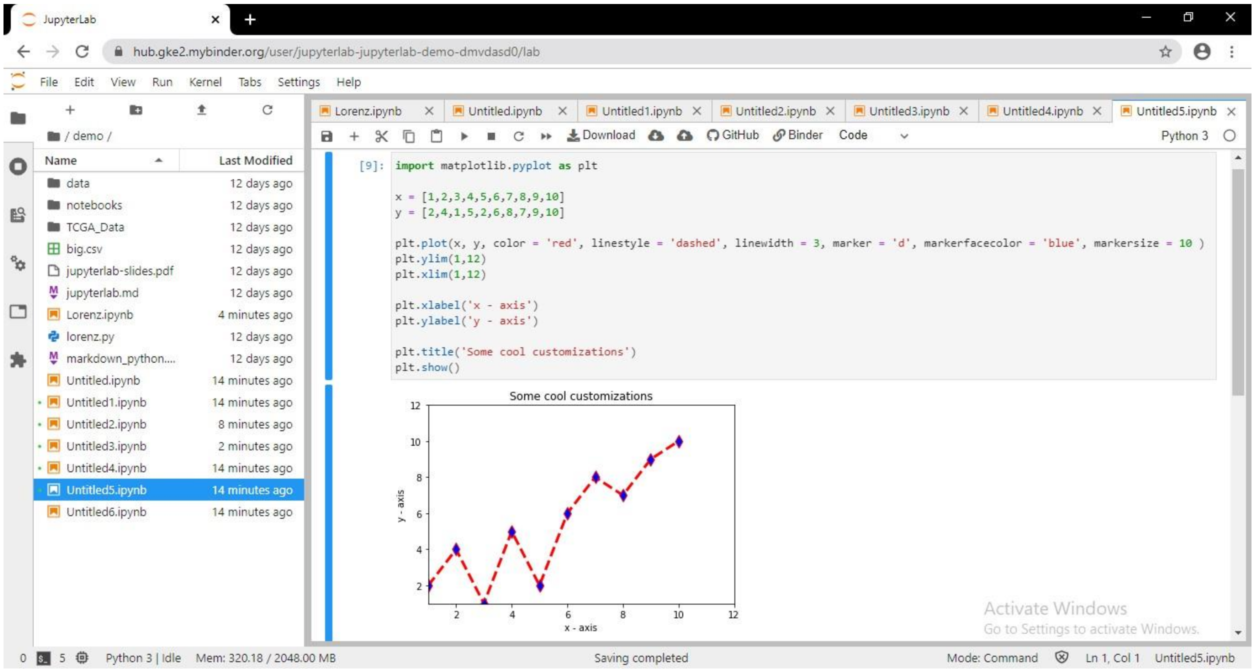
```
import matplotlib.pyplot as plt

x = [1,2,3,4,5,6,7,8,9,10] y
= [2,4,1,5,2,6,8,7,9,10]


plt.plot(x, y, color = 'red', linestyle = 'dashed', linewidth = 3, marker = 'd', markerfacecolor =
'blue', markersize = 10 )
plt.ylim(1,12) plt.xlim(1,12)


plt.xlabel('x - axis') plt.ylabel('y
- axis')


plt.title('Some cool customizations') plt.show()
```



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Untitled6.ipynb	14 minutes ago

```
[9]: import matplotlib.pyplot as plt

     x = [1,2,3,4,5,6,7,8,9,10]
     y = [2,4,1,5,2,6,8,7,9,10]

     plt.plot(x, y, color = 'red', linestyle = 'dashed', linewidth = 3, marker = 'd', markerfacecolor = 'blue', markersize = 10 )
     plt.ylim(1,12)
     plt.xlim(1,12)

     plt.xlabel('x - axis')
     plt.ylabel('y - axis')

     plt.title('Some cool customizations')
     plt.show()
```

Some cool customizations
12
10
8
6
4
2
y - axis
2
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x - axis
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```
x1 = [1,2,3,4,5] y1
= [2,8,3,10,5]
plt.plot(x1, y1, color = 'red', linewidth = 3)
x2 = [1,2,3,4,5] y2 = [4,5,3,1,2]
plt.plot(x2, y2, color = 'blue', linewidth = 3)
```

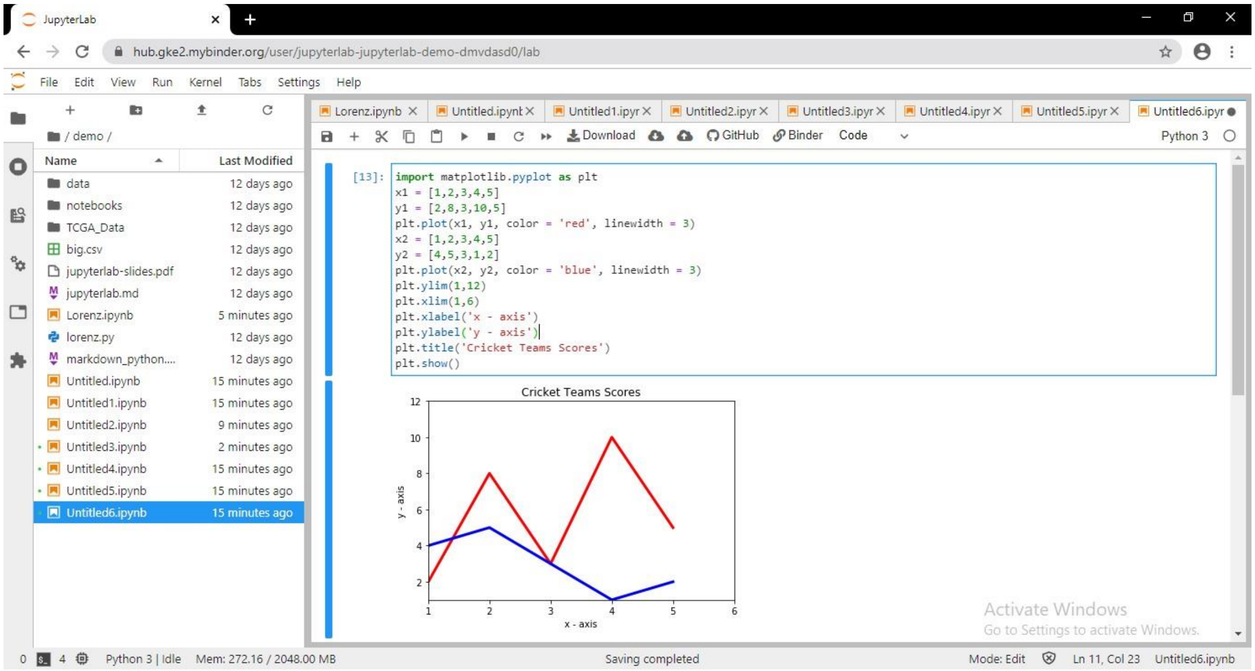
import matplotlib.pyplot as plt

plt.ylim(1,12) plt.xlim(1,6)

plt.xlabel('x - axis') plt.ylabel('y

- axis')

plt.title('Cricket Teams Scores') plt.show()



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Untitled6.ipynb	15 minutes ago

[13]:

```
import matplotlib.pyplot as plt
x1 = [1,2,3,4,5]
y1 = [2,8,3,10,5]
plt.plot(x1, y1, color = 'red', linewidth = 3)
x2 = [1,2,3,4,5]
y2 = [4,5,3,1,2]
plt.plot(x2, y2, color = 'blue', linewidth = 3)
plt.ylim(1,12)
plt.xlim(1,6)
plt.xlabel('x - axis')
plt.ylabel('y - axis')
plt.title('Cricket Teams Scores')
plt.show()
```

left = [1, 2, 3, 4, 5] height

= [10, 24, 36, 40, 5]

tick_label = ['one', 'two', 'three', 'four', 'five']

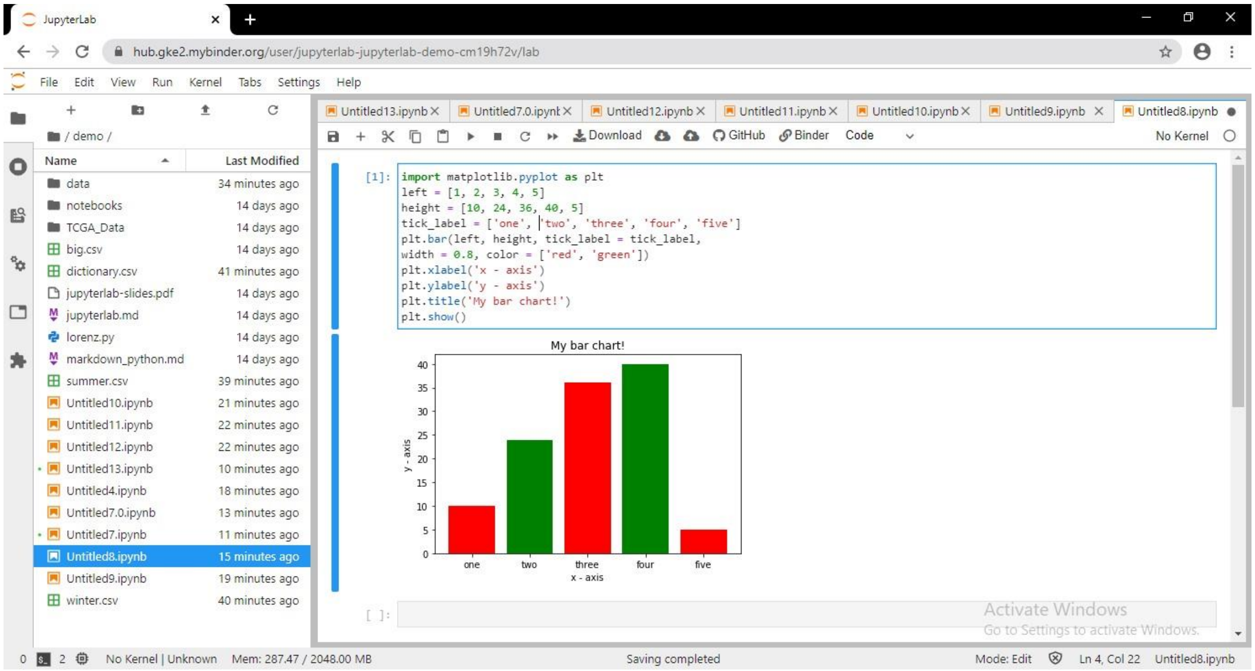
plt.bar(left, height, tick_label = tick_label,

width = 0.8, color = ['red', 'green'])

plt.xlabel('x - axis') plt.ylabel('y - axis')

plt.title('My bar chart!') plt.show()

```
import matplotlib.pyplot as plt
```



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Untitled7.ipynb	11 minutes ago
Untitled8.ipynb	15 minutes ago
Untitled9.ipynb	19 minutes ago
winter.csv	40 minutes ago

```
[1]: import matplotlib.pyplot as plt
     left = [1, 2, 3, 4, 5]
     height = [10, 24, 36, 40, 5]
     tick_label = ['one', 'two', 'three', 'four', 'five']
     plt.bar(left, height, tick_label = tick_label,
     width = 0.8, color = ['red', 'green'])
     plt.xlabel('x - axis')
     plt.ylabel('y - axis')
     plt.title('My bar chart!')
     plt.show()
```

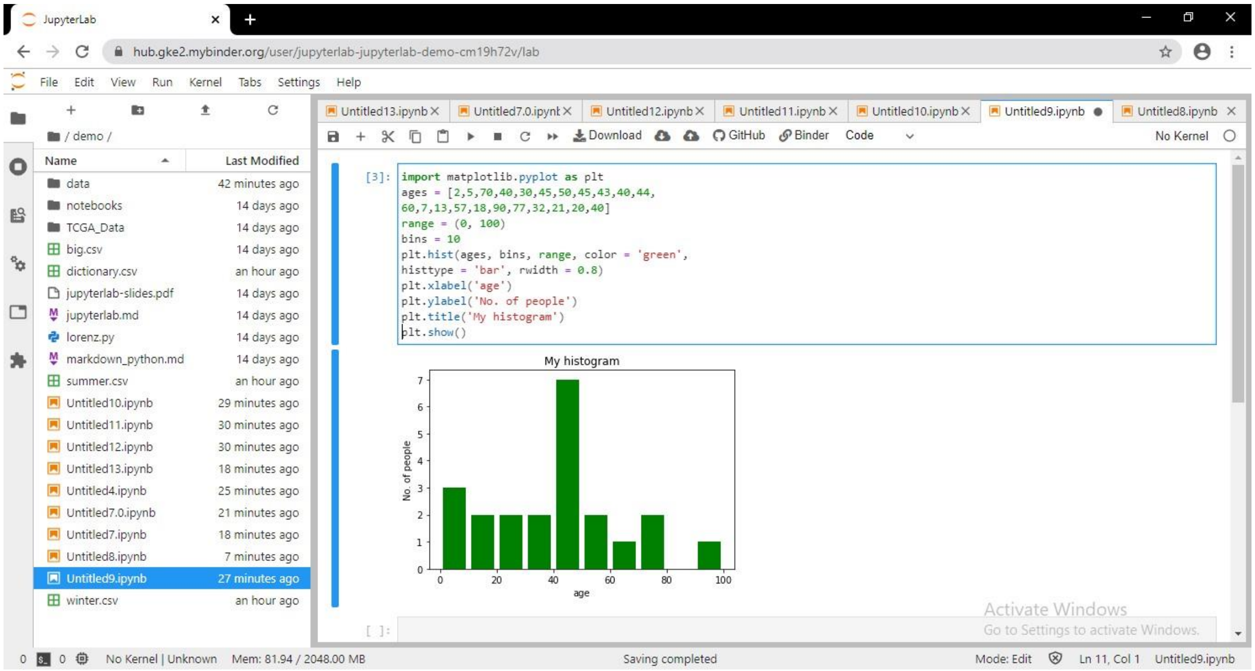
```
# frequencies
ages = [2,5,70,40,30,45,50,45,43,40,44,60,7,13,57,18,90,77,32,21,20,40]
# setting the ranges and no. of intervals
range = (0, 100) bins = 10
# plotting a histogram
plt.hist(ages, bins, range, color = 'green', histtype = 'bar', rwidth = 0.8)
# x-axis label
plt.xlabel('age') #
frequency label
plt.ylabel('No. of people')
# plot title
```

import matplotlib.pyplot as plt

plt.title('My histogram') #

function to show the plot

plt.show()



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Untitled8.ipynb	7 minutes ago
Untitled9.ipynb	27 minutes ago
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```
[3]: import matplotlib.pyplot as plt
     ages = [2,5,70,40,30,45,50,45,43,40,44,
     60,7,13,57,18,90,77,32,21,20,40]
     range = (0, 100)
     bins = 10
     plt.hist(ages, bins, range, color = 'green',
     histtype = 'bar', rwidth = 0.8)
     plt.xlabel('age')
     plt.ylabel('No. of people')
     plt.title('My histogram')
     plt.show()
```

```
[ ]:
```

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# x-axis values x =

[1,2,3,4,5,6,7,8,9,10]

# y-axis values y =

[2,4,5,7,6,8,9,11,12,12] #

plotting points as a scatter plot

plt.scatter(x, y, label= "stars", color= "green",marker= "*", s=30)

# x-axis label

plt.xlabel('x - axis') #

frequency label

plt.ylabel('y - axis')

# plot title

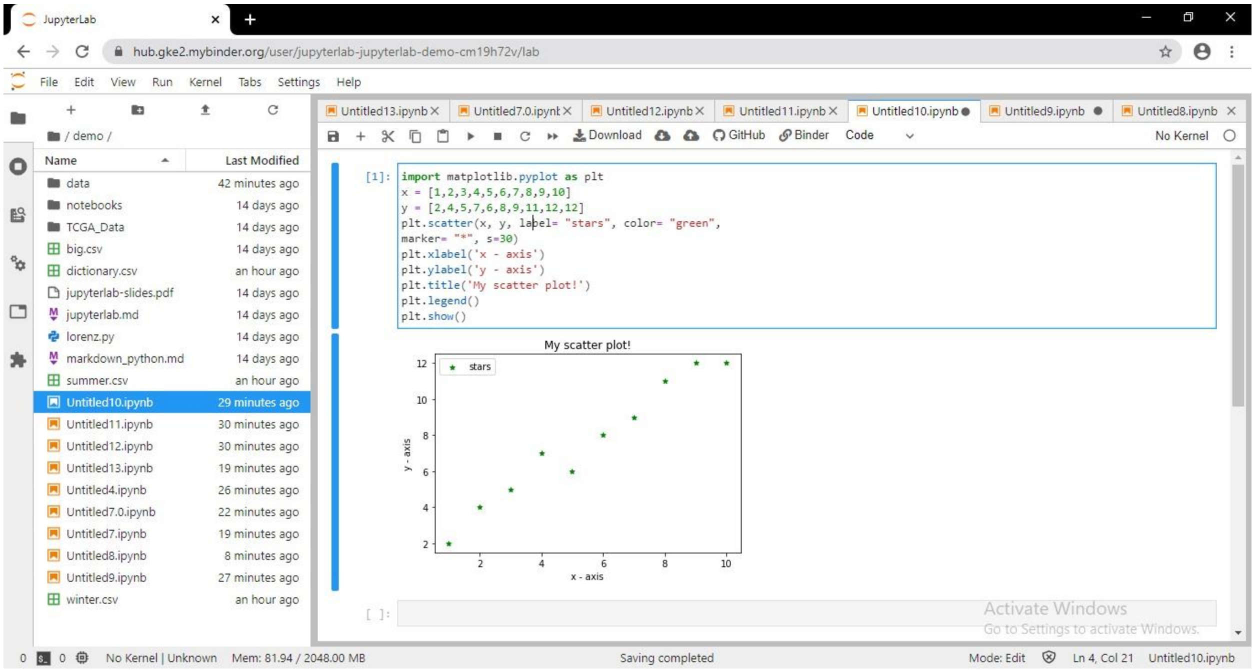
import matplotlib.pyplot as plt

plt.title('My scatter plot!') #

showing legend

plt.legend()

# function to show the plot plt.show()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My scatter plot!
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Untitled9.ipynb	27 minutes ago
winter.csv	an hour ago

```
[1]: import matplotlib.pyplot as plt
     x = [1,2,3,4,5,6,7,8,9,10]
     y = [2,4,5,7,6,8,9,11,12,12]
     plt.scatter(x, y, label= "stars", color= "green",
     marker= "*", s=30)
     plt.xlabel('x - axis')
     plt.ylabel('y - axis')
     plt.title('My scatter plot!')
     plt.legend()
     plt.show()
```

```
[ ]:
```

# defining labels

activities = ['eat', 'sleep', 'work', 'play']

# portion covered by each label slices

= [3, 7, 8, 6] # color for each label

colors = ['r', 'y', 'g', 'b'] #

plotting the pie chart

plt.pie(slices, labels = activities, colors=colors,

startangle=90, shadow = True, explode = (0, 0, 0.1, 0), radius

= 1.2, autopct = '%1.1f%%')

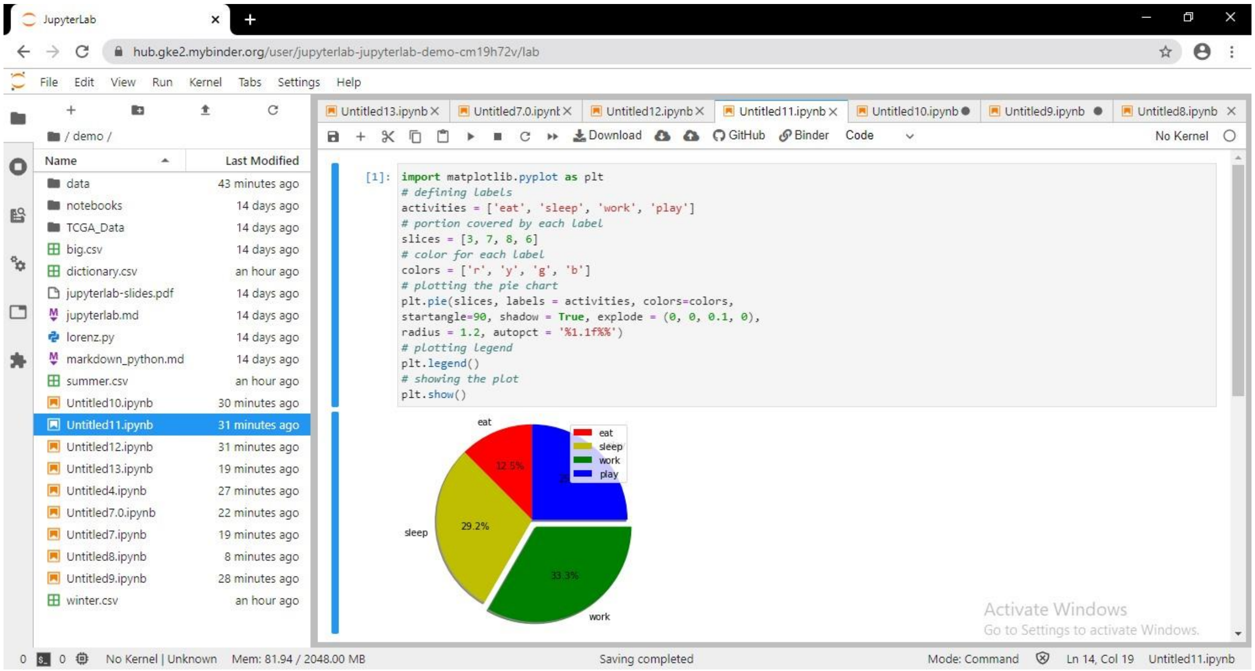
# plotting legend

plt.legend() #

showing the plot

plt.show()

import matplotlib.pyplot as plt



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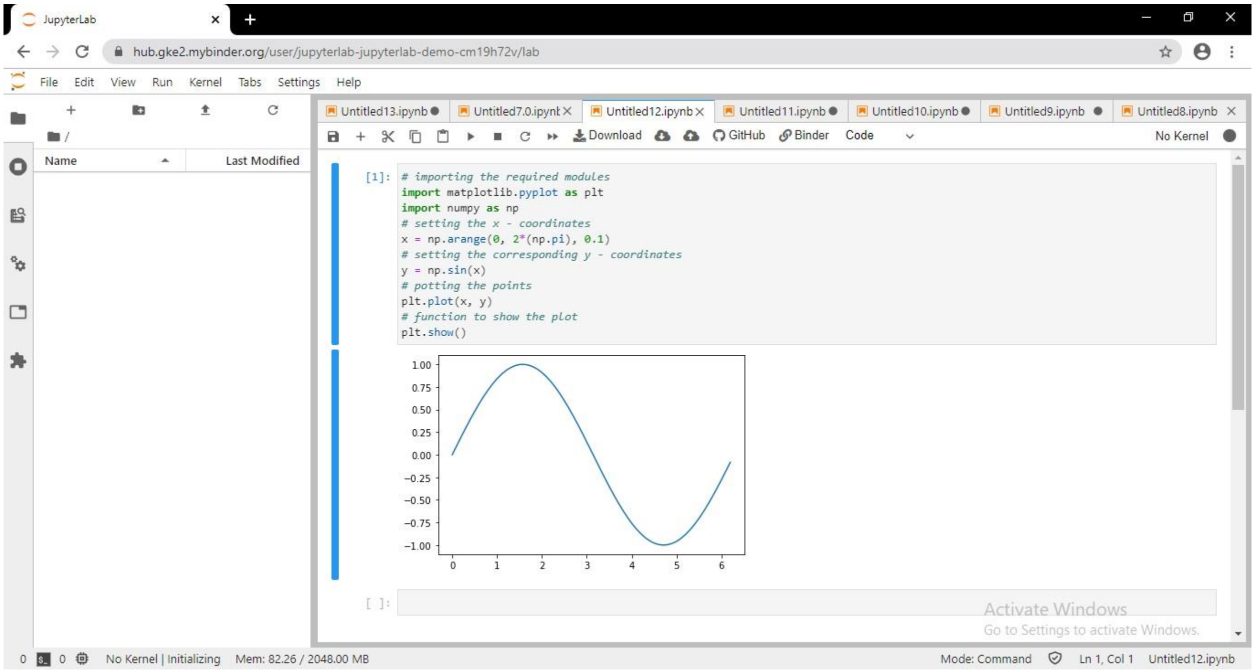
winter.csv	an hour ago

[1]:

```
import matplotlib.pyplot as plt
# defining labels
activities = ['eat', 'sleep', 'work', 'play']
# portion covered by each label
slices = [3, 7, 8, 6]
# color for each label
colors = ['r', 'y', 'g', 'b']
# plotting the pie chart
plt.pie(slices, labels = activities, colors=colors,
startangle=90, shadow = True, explode = (0, 0, 0.1, 0),
radius = 1.2, autopct = '%1.1f%%')
# plotting legend
plt.legend()
# showing the plot
plt.show()
```

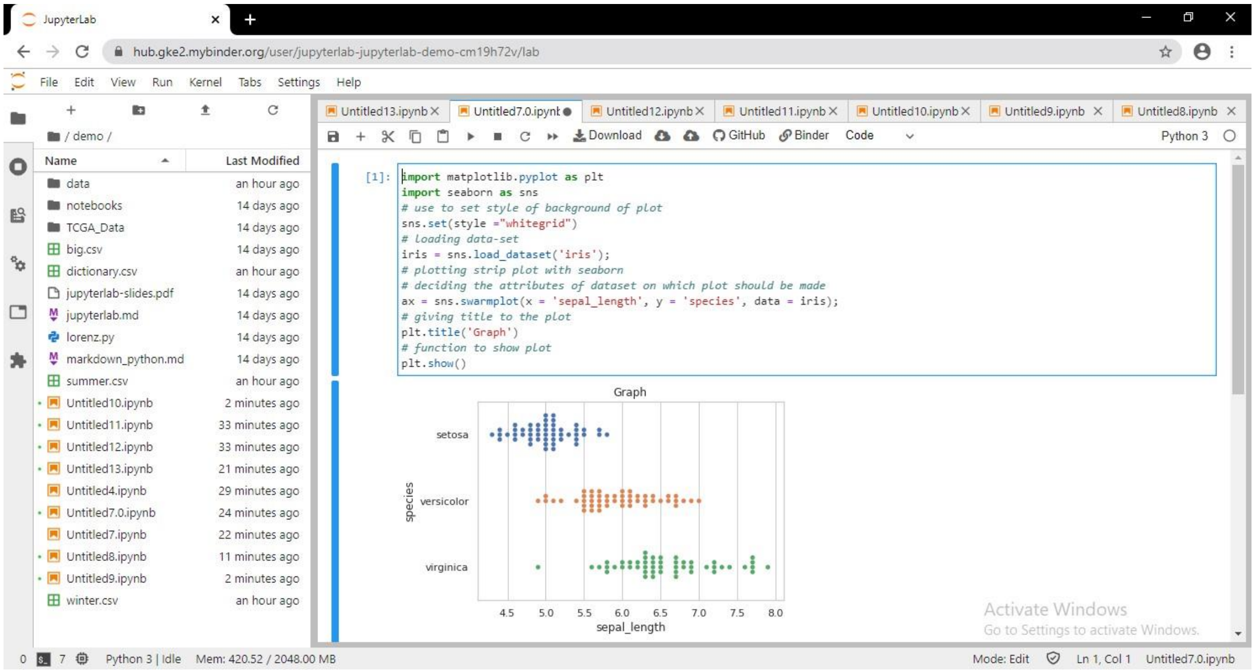
```
# importing the required modules
import matplotlib.pyplot as plt import
numpy as np
# setting the x - coordinates x =
np.arange(0, 2*(np.pi), 0.1)
# setting the corresponding y - coordinates
y = np.sin(x) # potting the points
plt.plot(x, y)
# function to show the plot plt.show()
```



```
[1]: # importing the required modules
     import matplotlib.pyplot as plt
     import numpy as np
     # setting the x - coordinates
     x = np.arange(0, 2*(np.pi), 0.1)
     # setting the corresponding y - coordinates
     y = np.sin(x)
     # potting the points
     plt.plot(x, y)
     # function to show the plot
     plt.show()
```

```
# importing the required module
import matplotlib.pyplot as plt import
seaborn as sns
```

```
# use to set style of background of plot

sns.set(style ="whitegrid") # loading

data-set iris = sns.load_dataset('iris');

# plotting strip plot with seaborn

# deciding the attributes of dataset on which plot should be made ax

= sns.swarmplot(x = 'sepal_length', y = 'species', data = iris);

# giving title to the plot

plt.title('Graph') #

function to show plot

plt.show()
```



```
[1]: import matplotlib.pyplot as plt
     import seaborn as sns
     # use to set style of background of plot
     sns.set(style ="whitegrid")
     # loading data-set
     iris = sns.load_dataset('iris');
     # plotting strip plot with seaborn
     # deciding the attributes of dataset on which plot should be made
     ax = sns.swarmplot(x = 'sepal_length', y = 'species', data = iris);
     # giving title to the plot
     plt.title('Graph')
     # function to show plot
     plt.show()
```

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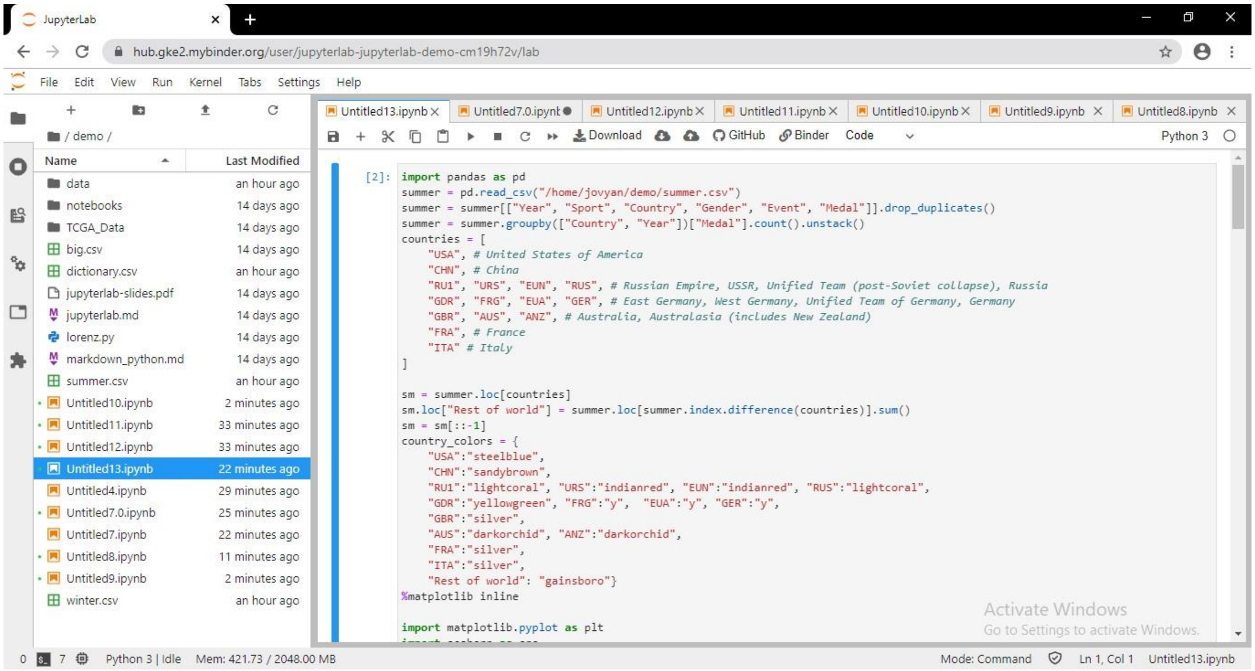
winter.csv	an hour ago

```
import pandas as pd

summer = pd.read_csv("/home/jovyan/demo/summer.csv")

summer = summer[["Year", "Sport", "Country", "Gender", "Event", "Medal"]].drop_duplicates()

summer = summer.groupby(["Country", "Year"])["Medal"].count().unstack() countries = [

   "USA", # United States of America
```

```
    "CHN", # China
    "RU1", "URS", "EUN", "RUS", # Russian Empire, USSR, Unified Team (post-Soviet
collapse), Russia
    "GDR", "FRG", "EUA", "GER", # East Germany, West Germany, Unified Team of Germany,
Germany
    "GBR", "AUS", "ANZ", # Australia, Australasia (includes New Zealand)
    "FRA", # France
    "ITA" # Italy
]

sm = summer.loc[countries]
sm.loc["Rest of world"] = summer.loc[summer.index.difference(countries)].sum()
sm = sm[::-1] country_colors = {
    "USA":"steelblue",
    "CHN":"sandybrown",
    "RU1":"lightcoral", "URS":"indianred", "EUN":"indianred", "RUS":"lightcoral",
    "GDR":"yellowgreen", "FRG":"y",  "EUA":"y", "GER":"y",
    "GBR":"silver",
    "AUS":"darkorchid", "ANZ":"darkorchid",
    "FRA":"silver",
    "ITA":"silver",
    "Rest of world": "gainsboro"}
%matplotlib inline

import matplotlib.pyplot as plt
import seaborn as sns import
numpy as np

sns.set_style("ticks")
sns.set_context("notebook", font_scale=1.2) colors
= [country_colors[c] for c in sm.index]

plt.figure(figsize=(12,8))
sm.T.plot.bar(stacked=True, color=colors, ax=plt.gca())

# Reverse the order of labels, so they match the data handles,
labels = plt.gca().get_legend_handles_labels()
plt.legend(handles[::-1], labels[::-1])

# Set labels and remove superfluous plot elements plt.ylabel("Number
of medals")
plt.title("Stacked barchart of select countries' medals at the Summer Olympics") sns.despine()

sm[1916] = np.nan # WW1
sm[1940] = np.nan # WW2
sm[1944] = np.nan # WW2  sm =
sm[sm.columns.sort_values()]
plt.figure(figsize=(12,8))
sm.T.plot.area(color=colors, ax=plt.gca(), alpha=0.5)
# Reverse the order of labels, so they match the data  handles,
labels = plt.gca().get_legend_handles_labels()
plt.legend(handles[::-1], labels[::-1])
# Set labels and remove superfluous plot elements  plt.ylabel("Number
of medals")
plt.title("Stacked areachart of select countries' medals at the Summer Olympics")
plt.xticks(sm.columns, rotation=90)  sns.despine()
```

```
for bl in ["zero", "sym", "wiggle", "weighted_wiggle"]:
    plt.figure(figsize=(6, 4))
    f = plt.stackplot(sm.columns, sm.fillna(0), colors=colors, baseline=bl,
alpha=0.5, linewidth=1)
    [a.set_edgecolor(sns.dark_palette(colors[i])[-2]) for i,a in enumerate(f)]
    # Edges to be slighter darker
plt.title("Baseline: {}".format(bl))
plt.axis('off')     plt.show()
```



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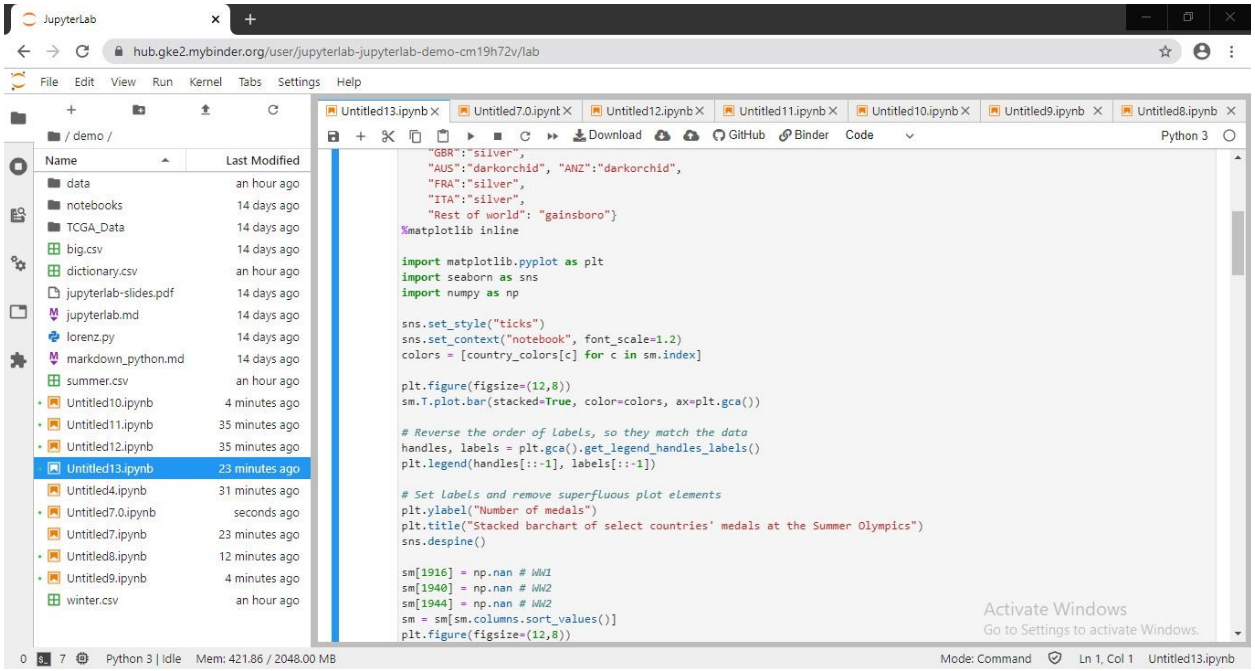
[2]:
```
import pandas as pd
summer = pd.read_csv("/home/jovyan/demo/summer.csv")
summer = summer[["Year", "Sport", "Country", "Gender", "Event", "Medal"]].drop_duplicates()
summer = summer.groupby(["Country", "Year"])["Medal"].count().unstack()
countries = [
    "USA", # United States of America
    "CHN", # China
    "RU1", "URS", "EUN", "RUS", # Russian Empire, USSR, Unified Team (post-Soviet collapse), Russia
    "GDR", "FRG", "EUA", "GER", # East Germany, West Germany, Unified Team of Germany, Germany
    "GBR", "AUS", "ANZ", # Australia, Australasia (includes New Zealand)
    "FRA", # France
    "ITA" # Italy
]

sm = summer.loc[countries]
sm.loc["Rest of world"] = summer.loc[summer.index.difference(countries)].sum()
sm = sm[::-1]
country_colors = {
    "USA":"steelblue",
    "CHN":"sandybrown",
    "RU1":"lightcoral", "URS":"indianred", "EUN":"indianred", "RUS":"lightcoral",
    "GDR":"yellowgreen", "FRG":"y",  "EUA":"y", "GER":"y",
    "GBR":"silver",
    "AUS":"darkorchid", "ANZ":"darkorchid",
    "FRA":"silver",
    "ITA":"silver",
    "Rest of world": "gainsboro"}
%matplotlib inline

import matplotlib.pyplot as plt
```



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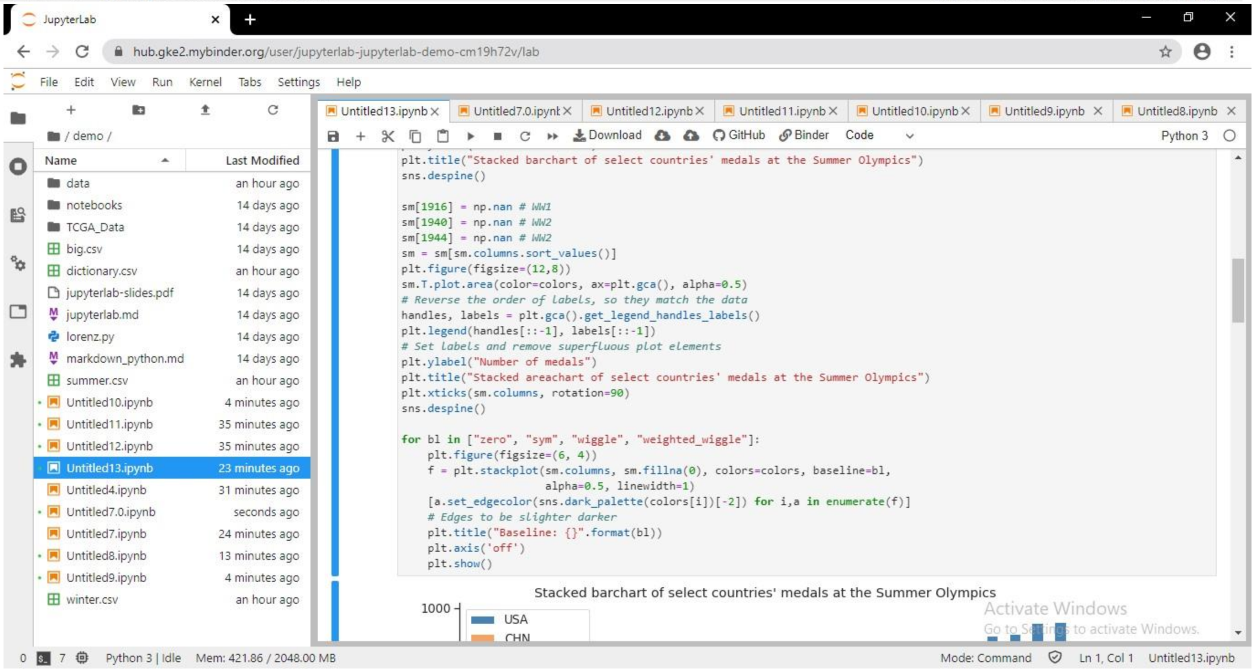
winter.csv	an hour ago

```
    "GBR":"silver",
    "AUS":"darkorchid", "ANZ":"darkorchid",
    "FRA":"silver",
    "ITA":"silver",
    "Rest of world": "gainsboro"}
%matplotlib inline

import matplotlib.pyplot as plt
import seaborn as sns
import numpy as np

sns.set_style("ticks")
sns.set_context("notebook", font_scale=1.2)
colors = [country_colors[c] for c in sm.index]

plt.figure(figsize=(12,8))
sm.T.plot.bar(stacked=True, color=colors, ax=plt.gca())

# Reverse the order of labels, so they match the data
handles, labels = plt.gca().get_legend_handles_labels()
plt.legend(handles[::-1], labels[::-1])

# Set labels and remove superfluous plot elements
plt.ylabel("Number of medals")
plt.title("Stacked barchart of select countries' medals at the Summer Olympics")
sns.despine()

sm[1916] = np.nan # WW1
sm[1940] = np.nan # WW2
sm[1944] = np.nan # WW2
sm = sm[sm.columns.sort_values()]
plt.figure(figsize=(12,8))
```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1000
USA
CHN
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winter.csv	an hour ago

```
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sns.despine()

sm[1916] = np.nan # WW1
sm[1940] = np.nan # WW2
sm[1944] = np.nan # WW2
sm = sm[sm.columns.sort_values()]
plt.figure(figsize=(12,8))
sm.T.plot.area(color=colors, ax=plt.gca(), alpha=0.5)
# Reverse the order of labels, so they match the data
handles, labels = plt.gca().get_legend_handles_labels()
plt.legend(handles[::-1], labels[::-1])
# Set labels and remove superfluous plot elements
plt.ylabel("Number of medals")
plt.title("Stacked areachart of select countries' medals at the Summer Olympics")
plt.xticks(sm.columns, rotation=90)
sns.despine()

for bl in ["zero", "sym", "wiggle", "weighted_wiggle"]:
    plt.figure(figsize=(6, 4))
    f = plt.stackplot(sm.columns, sm.fillna(0), colors=colors, baseline=bl,
                      alpha=0.5, linewidth=1)
    [a.set_edgecolor(sns.dark_palette(colors[i])[-2]) for i,a in enumerate(f)]
    # Edges to be slighter darker
    plt.title("Baseline: {}".format(bl))
    plt.axis('off')
    plt.show()
```

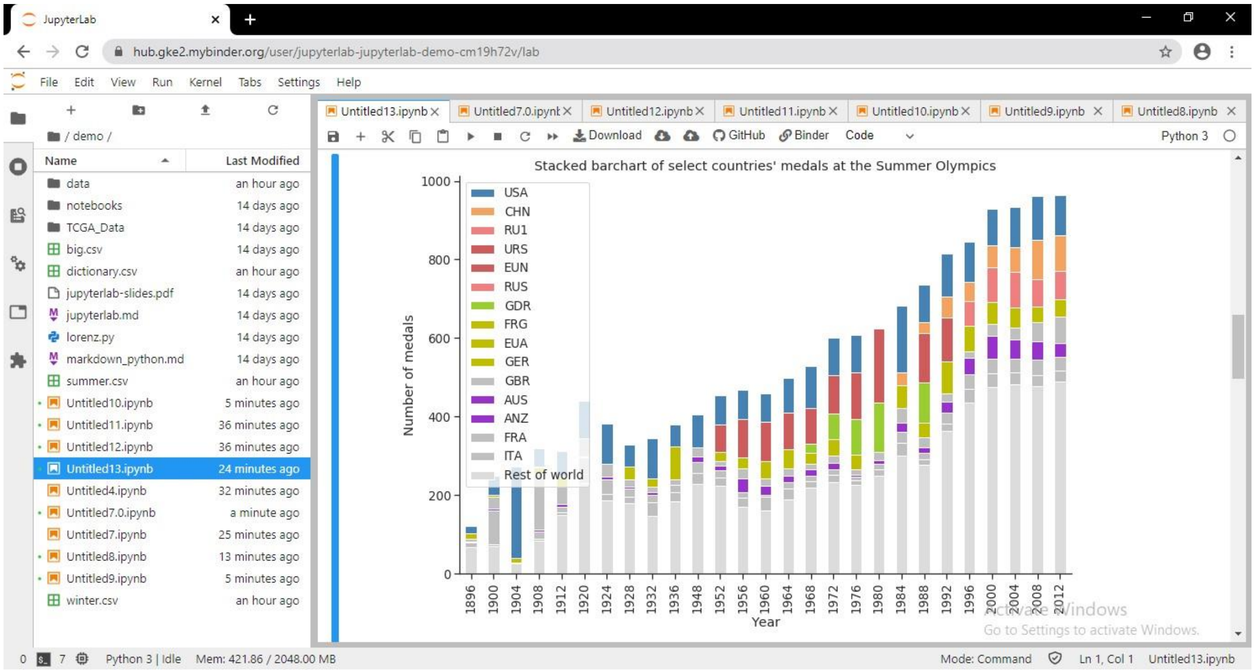

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Number of medals
Year
0 200 400 600 800 1000
1896 1900 1904 1908 1912 1920 1924 1928 1932 1936 1948 1952 1956 1960 1964 1968 1972 1976 1980 1984 1988 1992 1996 2000 2004 2008 2012
USA
CHN
RU1
URS
EUN
RUS
GDR
FRG
EUA
GER
GBR
AUS
ANZ
FRA
ITA
Rest of world
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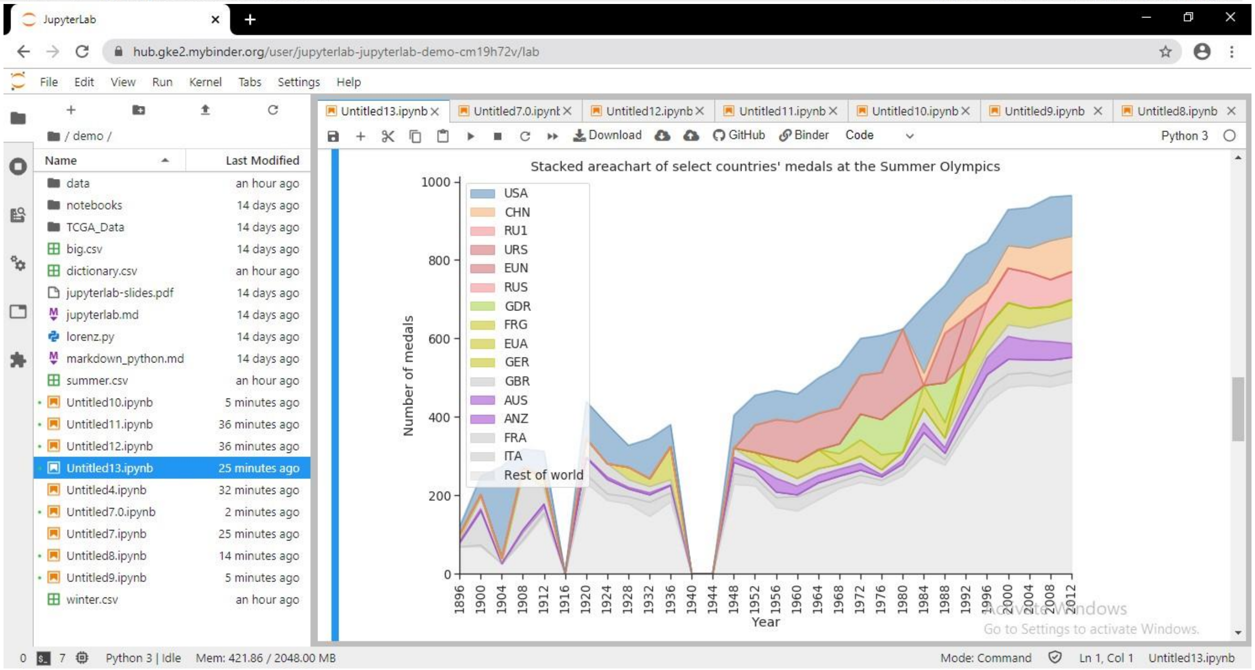

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USA
CHN
RU1
URS
EUN
RUS
GDR
FRG
EUA
GER
GBR
AUS
ANZ
FRA
ITA
Rest of world
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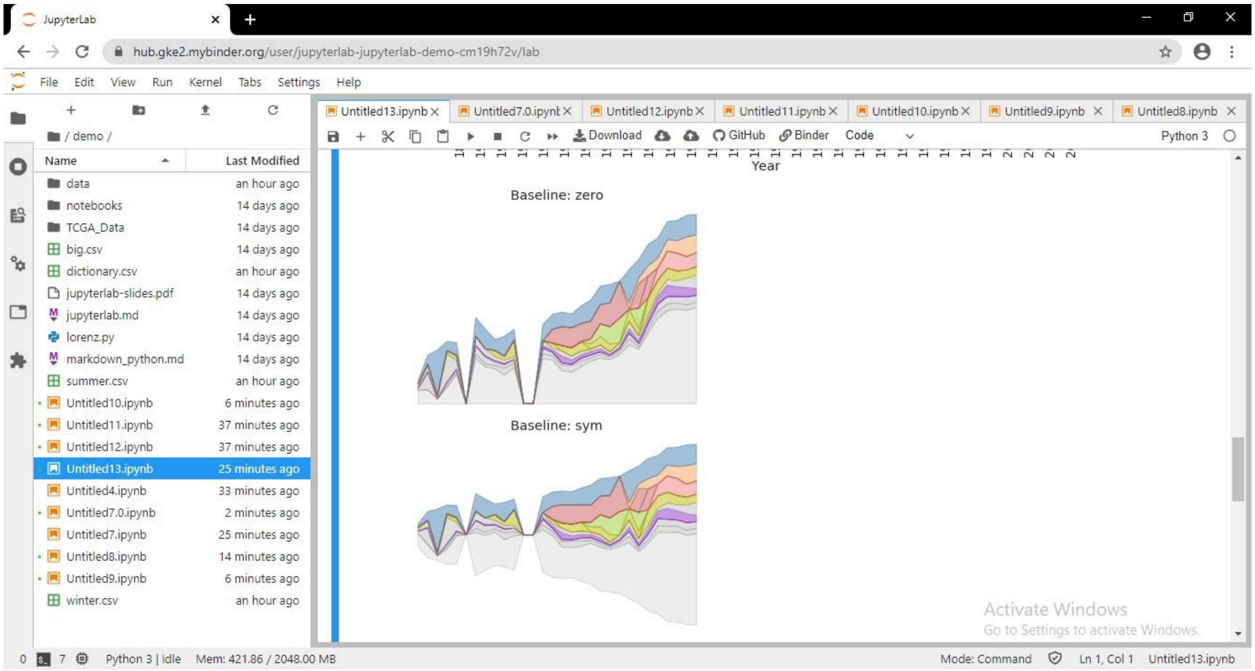
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Year
Baseline: zero
Baseline: sym
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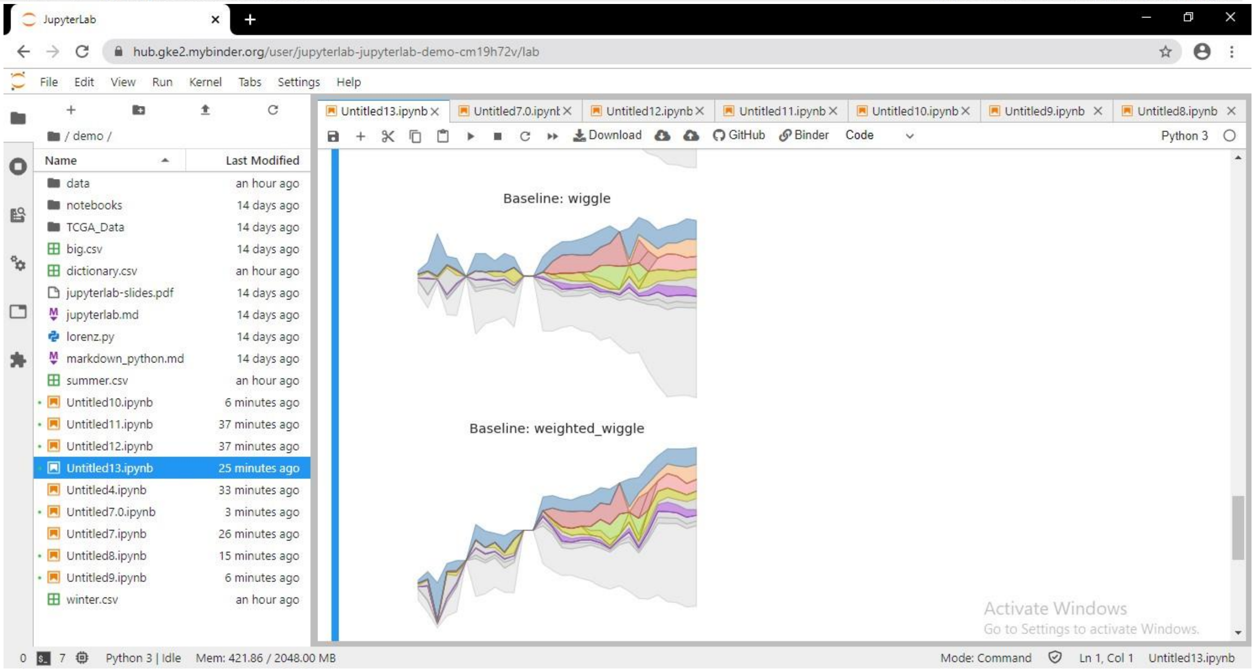
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