General FAQ's of Week-3 (PDS)

Errors while importing matplotlib:

1. While importing matplotlib library, getting the below error. How to resolve this error?

> **ImportError**: cannot import name 'animation' from partially initialized module 'matpl otlib' (most likely due to a circular import)

Ans: This error occurs when the matplotlib library is not installed properly. You need to reinstall the matplotlib library using the below codes. These codes are to be run in Jupyter notebook.

```
!pip uninstall matplotlib
!pip install -U matplotlib==3.2.2
!pip install -U seaborn==0.10.1
```

Please run the above codes line by line and restart the kernel after running the above codes.

2. While running %matplotlib inline I got the below error:

line magic function '%matplotlib" not found.

Ans: This error occurred when you have not imported matplotlib library before running %matplotlib inline code. Please run the below code and you will not get the above error:

```
import matplotlib
%matplotlib inline
```

3. I got the below error while importing matplotlib.

ERROR: Could not install packages due to an EnvironmentError: [WinError 5] Access is denied: 'c:\\users\\tanvi sood\\anaconda3\\lib\\site-packages\\~andas_libs\\algos.cp37-win_amd64.pyd'
Consider using the `--user` option or check the permissions.

Ans. Please run the below code in Jupyter notebook and then restart the Kernal.

```
!pip install pandas-profiling
```

4. While importing matplotlib.pyplot as plt , I got the below error:

```
In [3]: import numpy as np
        import pandas as pd
        import seaborn as sns
        import matplotlib.pyplot as plt
        from warnings import filterwarnings
        filterwarnings("ignore")

        sns.set(color_codes=True)
        %matplotlib inline
```

```
---------------------------------------------------------------------------
ImportError                               Traceback (most recent call last)
<ipython-input-3-5d0a72dc0c03> in <module>
      1 import numpy as np
      2 import pandas as pd
----> 3 import seaborn as sns
      4 import matplotlib.pyplot as plt
      5 from warnings import filterwarnings

~\Anaconda3\lib\site-packages\seaborn\__init__.py in <module>
      1 # Capture the original matplotlib rcParams
----> 2 import matplotlib as mpl
      3 _orig_rc_params = mpl.rcParams.copy()
      4
      5 # Import seaborn objects

----> 2 import matplotlib as mpl
      3 _orig_rc_params = mpl.rcParams.copy()
      4
      5 # Import seaborn objects

~\Anaconda3\lib\site-packages\matplotlib\__init__.py in <module>
    105 # cbook must import matplotlib only within function
    106 # definitions, so it is safe to import from it here.
--> 107 from . import cbook, rcsetup
    108 from matplotlib.cbook import MatplotlibDeprecationWarning, sanitize_sequence
    109 from matplotlib.cbook import mplDeprecation  # deprecated

~\Anaconda3\lib\site-packages\matplotlib\rcsetup.py in <module>
     24 import numpy as np
     25
---> 26 from matplotlib import animation, cbook
     27 from matplotlib.cbook import ls_mapper
     28 from matplotlib.fontconfig_pattern import parse_fontconfig_pattern

ImportError: cannot import name 'animation' from partially initialized module 'matplotlib' (most likely due to a circ
ular import) (C:\Users\shwgupta\Anaconda3\lib\site-packages\matplotlib\__init__.py)
```

Ans: Please uninstall & then re-install matplotlib. Follow the steps below:

Step 1:

pip uninstall matplotlib --yes

Step 2:

pip install matplotlib

Step 3:

import matplotlib as plt

Note: In Step 1, you have to put a double hyphen(-) before yes.

5. **A few doubts on box-plot:**

   a) What is the significance of boxplots and under which scenarios is box plot used?

   Ans. A boxplot shows a distribution of quantitative data. Boxplot can be useful if we want to compare the distribution of two or more continuous variables. Boxplot can be very useful to compare a variable among different categories. Eg. If you want to

compare the distribution of marks in class among males and females, a boxplot will be a right fit. Boxplot can also be very helpful in outlier identification.

b) does box plot always comply with categorical variables?

Ans: No, you can create a boxplot if you have only continuous variables. eg. If you want to see the total marks distribution of the whole class, you can generate a boxplot of total marks variable

c) What is the significance of HUE in box plots?
Ans: hue is used when you have 2 categorical variables and you want to analyse graphs for both categories. Eg. You want to analyse the marks scored by males and females in English, Maths and Science.

d) what does IQR represent in box plots?
Ans: IQR refers to interquartile range i.e the range between 25 percentile point and 75% point of a given continuous variable

6. **What is a Violin plot? If width of the body is smaller and height is taller, what does it mean?**
Ans. A violin plot plays a similar role as that of a box plot. It shows the distribution of quantitative data across several levels of one (or more) categorical variables such that those distributions can be compared. Unlike a box plot, in which all of the plot components correspond to actual datapoints, the violin plot features a kernel density estimation of the underlying distribution. Now if the width is smaller and height is taller, it means that the data might be evenly distributed in the given range. For more details on violin plot, please refer to the link:https://seaborn.pydata.org/generated/seaborn.violinplot.html

7. **What type of plots can be used for the below given criteria?**

a) Univariate analysis & if variable is continuous
Ans: Histogram, Violin plot, Strip plot, Box plot

b) Univariate distribution & if variable is categorical?
Ans. Count plot

c) Bivariate distribution & if variables are continuous
Ans. Scatter plot, Line plot, Heatmap, Joint plot, Lm plot, Pair plot

d) Bivariate distribution & if variables are categorical
Ans. Count plot

e) Bivariate distribution & if one variable is continuous and other categorical?
Ans. Box plot, Pie chart, Histogram, Bar Plot, Point Plot, Violin plot, Strip Plot, Swarm plot, Pair plot

Please note that the above shared list of plots is not an exhaustive list.

8. **How to transfer the visual graphs from python into a ppt?**

   Ans: The easiest way is to right-click on the image and save the image. The saved image can be then added to the PPT.