**Assignment – 3 (Code Documentation)**

The package ‘pandas’ is imported as ‘pd’ as we make use of the functions read\_csv() and pivot\_table() available in the package.

**import pandas as pd**

**from pandas import DataFrame**

DataFrame is imported from the ‘pandas’ package as the data is to be represented by dataframes.

The package ‘seaborn’ is imported as ‘sns’ for plotting the heatmap using the function heatmap().

**import seaborn as sns**

A dataframe ‘dframe1’ is created and is used to store the extracted data from the csv file provided using the function read\_csv() and passing the csv file as the parameter. The dataframe is printed.

**dframe1 = pd.read\_csv('f2m\_ratios.csv')  
print dframe1**

A dataframe ‘dframe2’ is created and is used to store the pivot table of the dataframe ‘dframe1’ with the rows as ‘Age’ , the columns as ‘Year’ and the values are ‘Sex Ratio’ using the function pivot\_table() and the passing the data, value, rows and columns as the parameters respectively . The dataframe is printed.

**dframe2 = pd.pivot\_table(dframe1,'Sex Ratio','Age','Year')  
print dframe2**

The function heatmap() is used to plot the heat map by passing the dataframe ‘dframe2’ as the parameter where the x-axis is the Year and the y-axis is the Age and the values plotted are the Sex Ratio. The heatmap is diverging as the colour gradient changes from dark to light as the Sex ratio increases. The getfigure() function is used to obtain the figure of the heatmap and is stored in ‘fig’.

The ‘fig’ is saved as a .png file using the function savefig() with the filename ‘heatmap.png’ specified. Thus the heatmap.png file is created as the file is executed.

**fig = sns.heatmap(dframe2).get\_figure()  
fig.savefig('heatmap.png')**