import pandas as pd

pd.set\_option("display.max.rows",None)

pd.set\_option("max\_colwidth",None)

#Q1

print ("Q1")

df = pd.read\_csv (r'ds\_salaries.csv')

print (df) ##print out csv file

print("############################################################")

##Question2

print ("Q2")

df = pd.read\_csv (r'ds\_salaries.csv')

df.groupby("work\_year").mean()["salary\_in\_usd"] ##group teh data by year and calcualte the avaerage salary in USD

print(df.groupby("work\_year").mean()["salary\_in\_usd"])

print("############################################################")

#Question3

print ("Q3")

min\_year = df.groupby("work\_year").mean()["salary\_in\_usd"].head(1)##group the data by year and calcualte the avaerage salary in USD and find the lowest one

max\_year = df.groupby("work\_year").mean()["salary\_in\_usd"].tail(1)##group the data by year and calcualte the avaerage salary in USD and find the highest one

print("The highest average salary year ")

print(max\_year)

print()

print("The lowest average salary year ")

print(min\_year)

print("############################################################")

#Question4

print ("Q4")

Avg\_lv\_jt = df.groupby(['experience\_level','job\_title']).mean()["salary\_in\_usd"]##group the data by year and experience level then calculate the average salary in USD

print(Avg\_lv\_jt)

print("############################################################")

#Quesion5

print ("Q5")

job\_title\_max = df.groupby("job\_title").max()["salary\_in\_usd"]##group teh data by year and calcualte the avaerage salary in USD and find each tile highest salary in USD

job\_title\_min = df.groupby("job\_title").min()["salary\_in\_usd"]##group teh data by year and calcualte the avaerage salary in USD and find each tile lowest salary in USD

print("Maxium:")

print(job\_title\_max)

print("Minium:")

print(job\_title\_min)

print("############################################################")

#Question6

print ("Q6")

Avg\_av\_jt = df.groupby(['work\_year','job\_title']).mean()["salary\_in\_usd"]##group teh data by year and job title then calcualte the avaerage salary in USD

print(Avg\_av\_jt)

print("############################################################")

#Q7

print ("Q7")

df.head()

a = df.groupby(['job\_title','work\_year'],as\_index=False)['salary\_in\_usd'].mean()##group teh data by year and job title then calcualte the avaerage salary in USD

s = pd.DataFrame(a) ##set a new data frame

b = s.groupby(['job\_title'],as\_index=False)['salary\_in\_usd'].max()##find max

c = s.groupby(['job\_title'],as\_index=False)['salary\_in\_usd'].min()##findd min

df1 = pd.DataFrame(b)

df2 = pd.DataFrame(c)

df3 = df2.copy()

df3['difference'] = df1['salary\_in\_usd'] - df3['salary\_in\_usd']##function for calculate the change

df3 = df3[df3['difference'] > 0] ##becuse some job title just apeear once, so we need set the non zero diffference

n1 = df3['job\_title'][df3['difference']==df3['difference'].max()]

n2 = df3['job\_title'][df3['difference']==df3['difference'].min()]

print("Highest chang job title")

print(n1)

print()

print("Lowest chang job title")

print(n2)

print("############################################################")

#Question8

print ("Q8")

average\_ratio = df.groupby("remote\_ratio").mean()["salary\_in\_usd"]##group the data remote ratio and then calcualte the avaerage salary in USD

print(average\_ratio)

print("There is/are:",len(average\_ratio),"type/s of ratio")

print("############################################################")

#Question9

print ("Q9")

upper\_bound\_salary = df.groupby("company\_location").max()["salary\_in\_usd"].max()##group the data location then find highesrt salary

lower\_bound\_salary = df.groupby("company\_location").min()["salary\_in\_usd"].min()##group the data location then find lowest salary

print("Highest Loaction:")

print(df.loc[df['salary\_in\_usd'] == upper\_bound\_salary, 'company\_location'])##return the highest salary location

print()

print("Lowest Location:")

print(df.loc[df['salary\_in\_usd'] == lower\_bound\_salary, 'company\_location'])##return the lowest salary location

print("############################################################")

#Question10

print("Q10")

print("I would not like to change my resume right now")