PyCitySchool Assignment

District Summary

1. First part is importing dependencies. Done already.
2. At first, I calculate the values demanded and finally put them all in a DataFrame.  
   Therefore, I do every step as per assignment instructions. Finally I use “pd.DataFrame” to join all values in one DataFrame.
3. I am not going to explain the details, as they are straightforward.

School Summary

1. In the first step, I have organized data using “groupby()” function and have grouped data based on “school\_name”.
2. Next, I have done the same for “type” and have used school name as “index column”.
3. I have used “count()” to get the number of students using “Student ID” column.
4. Then “budget per student” by dividing budget by the number of students
5. Average math and reading scores using “mean()” function.
6. For calculating percentage I have used “df.loc()” to apply conditions, then counting using “groupby()” based on “Student ID”. Finally divided by total number of students times 100 to calculate the percentage. This has been done for both “math” and “reading”.
7. Overall percentage applies two conditions at the same time and uses the same process as above.
8. The last part is using “df.DataFrame({ })” to make a DataFrame
9. Lastly showing the results.

Top Five Best and Worst Performing Based on Overall Passing

1. To do this I have used “df.sort\_value()” to sort data in one column in a descending order so I can see the biggest overall percentage on the top.
2. To see the worst performing schools, all I did was to make the order ascending and get the bottom five.

Math and Reading Scores by Grade

1. To do this, I first apply a condition to get all grades that are a specific grade for example: 9th. Then I have grouped the results by “school\_name and have calculated the average of all reading scores.  
   So simply put; ninth\_grade.groupby(["school\_name"]).mean()["math\_score"]

Scores by School Spending

1. To do this, I have created a bin. Then I have names my groups.
2. Next step is creating a dataframe. I have used “school\_summary\_df” dataframe and have dropped the unwanted columns('Total Students', 'Per Student Budget', 'Total School Budget')
3. I have used “pd.cut()” to change “per student budget” to groups of budgets using bins.  
   The input array is “budget\_per\_student”.
4. Finally the spending group is calculated by using “groupby().mean()”

Scores by School Size

1. This is just the same process as above only this time the bin is consisted of different values.

Scores by School Type

1. This is the easy part as I used a simple “groupby()” and a “mean()” function to calculate the average of values.