



DATA ANALYTICS

Module 4 - Data Analysis with Python

Assignment 4

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SUMMARY

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ANALYSIS

On the following reports will find the below information in each of them:

- **District Summary:** a snapshot of the scores, budget spent, and total student for the whole district.
- **School Distinct:** the snapshot above per school and the total budget per student.
- **Top Performing Schools:** a snapshot of the top 5 school with the highest overall passing.
- **Bottom Performing Schools:** a snapshot of the top 5 school with the lowest overall passing.
- **Math Scores by Grade:** the math average score for each school by grade (9th-12th).
- **Reading Scores by Grade:** the reading average score for each school by grade (9th-12th).
- **Scores by School Spending:** the average scores populated by budget per student.
- **Scores by School Size:** the average scores populated by size.
- **Scores by School Type:** the average scores populated by type.

After reviewing the schools' performance for the district, the following point came up to my attention:

- The district has spent over \$ 24million on the schools during the period.
- The number of success students is higher on charter schools then district schools. On the other hand, the number of students and budget is significantly higher on district schools than charter schools.
- From over 39K students on the district, 65% have passed in math and reading, and it we can assume that they have more difficulty in math, since the percentage of success in *reading* is slit higher than in *math*.
- When analyzing the scores for *math* and *reading* for each school by grade, the following schools should review their curriculum and strategy for *math* classes, since the scores for this one is around 76-77% for all grades:
 - Bailey High School
 - Figueroa High School
 - Ford High School
 - Rodriguez High School
 - Hernandez High School
 - Huang High School
 - Johnson High School
- 60% of the students at large size schools did **not** reach a minimum score of 70 in *math* and *reading*. While around 90% of the students from small and medium size schools got it.
- The budget per student does not have any relation with good scores, once highest scores came from the schools with less budget per student.

Since the charter schools are focus on specifics education and they build their curriculum according to this, and the public schools are more general and the curriculum is defined by the district focusing in different areas, the best way is to compare the scores for each school according to their type.

On the other hand, comparing these two types of schools will be very helpful to the district analyze and maybe review the curriculum for the public schools, since they are standardized.

REPORTS

District Summary

	Total Schools	Total Students	Total Budget	Avg Math Score	Avg Reading Score	% Passing Math	% Passing Reading	% Overall Passing
0	15	39,170	\$24,649,428.00	78.985	81.878	74.981	85.805	65.172

School Summary

	School Type	Total Students	Total School Budget	Per Student Budget	Avg Math Score	Avg Reading Score	% Passing Math	% Passing Reading	% Overall Passing
school_name									
Bailey High School	[District]	4976	\$3,124,928.00	\$628.00	77.048	81.034	66.680	81.933	54.642
Cabrera High School	[Charter]	1858	\$1,081,356.00	\$582.00	83.062	83.976	94.133	97.040	91.335
Figueroa High School	[District]	2949	\$1,884,411.00	\$639.00	76.712	81.158	65.988	80.739	53.204
Ford High School	[District]	2739	\$1,763,916.00	\$644.00	77.103	80.746	68.310	79.299	54.290
Griffin High School	[Charter]	1468	\$917,500.00	\$625.00	83.351	83.817	93.392	97.139	90.599
Hernandez High School	[District]	4635	\$3,022,020.00	\$652.00	77.290	80.934	66.753	80.863	53.528
Holden High School	[Charter]	427	\$248,087.00	\$581.00	83.803	83.815	92.506	96.253	89.227
Huang High School	[District]	2917	\$1,910,635.00	\$655.00	76.629	81.183	65.684	81.316	53.514
Johnson High School	[District]	4761	\$3,094,650.00	\$650.00	77.072	80.966	66.058	81.222	53.539
Pena High School	[Charter]	962	\$585,858.00	\$609.00	83.840	84.045	94.595	95.946	90.541
Rodriguez High School	[District]	3999	\$2,547,363.00	\$637.00	76.843	80.745	66.367	80.220	52.988
Shelton High School	[Charter]	1761	\$1,056,600.00	\$600.00	83.359	83.726	93.867	95.855	89.892
Thomas High School	[Charter]	1635	\$1,043,130.00	\$638.00	83.418	83.849	93.272	97.309	90.948
Wilson High School	[Charter]	2283	\$1,319,574.00	\$578.00	83.274	83.989	93.868	96.540	90.583
Wright High School	[Charter]	1800	\$1,049,400.00	\$583.00	83.682	83.955	93.333	96.611	90.333

Top Performing Schools (By % Overall Passing)

	School Type	Total Students	Total School Budget	Per Student Budget	Avg Math Score	Avg Reading Score	% Passing Math	% Passing Reading	% Overall Passing
school_name									
Cabrera High School	[Charter]	1858	\$1,081,356.00	\$582.00	83.062	83.976	94.133	97.040	91.335
Thomas High School	[Charter]	1635	\$1,043,130.00	\$638.00	83.418	83.849	93.272	97.309	90.948
Griffin High School	[Charter]	1468	\$917,500.00	\$625.00	83.351	83.817	93.392	97.139	90.599
Wilson High School	[Charter]	2283	\$1,319,574.00	\$578.00	83.274	83.989	93.868	96.540	90.583
Pena High School	[Charter]	962	\$585,858.00	\$609.00	83.840	84.045	94.595	95.946	90.541

Bottom Performing Schools (By % Overall Passing)

	School Type	Total Students	Total School Budget	Per Student Budget	Avg Math Score	Avg Reading Score	% Passing Math	% Passing Reading	% Overall Passing
school_name									
Rodriguez High School	[District]	3999	\$2,547,363.00	\$637.00	76.843	80.745	66.367	80.220	52.988
Figueroa High School	[District]	2949	\$1,884,411.00	\$639.00	76.712	81.158	65.988	80.739	53.204
Huang High School	[District]	2917	\$1,910,635.00	\$655.00	76.629	81.183	65.684	81.316	53.514
Hernandez High School	[District]	4635	\$3,022,020.00	\$652.00	77.290	80.934	66.753	80.863	53.528
Johnson High School	[District]	4761	\$3,094,650.00	\$650.00	77.072	80.966	66.058	81.222	53.539

Math Scores by Grade

	9th	10th	11th	12th
school_name				
Bailey High School	77.084	76.997	77.516	76.492
Cabrera High School	83.095	83.155	82.766	83.277
Figueroa High School	76.403	76.540	76.884	77.151
Ford High School	77.361	77.672	76.918	76.180
Griffin High School	82.044	84.229	83.842	83.356
Hernandez High School	77.438	77.337	77.136	77.187
Holden High School	83.787	83.430	85.000	82.855
Huang High School	77.027	75.909	76.447	77.226
Johnson High School	77.188	76.691	77.492	76.863
Pena High School	83.625	83.372	84.328	84.122
Rodriguez High School	76.860	76.612	76.396	77.691
Shelton High School	83.421	82.917	83.383	83.779
Thomas High School	83.590	83.088	83.499	83.497
Wilson High School	83.086	83.724	83.195	83.036
Wright High School	83.265	84.010	83.837	83.645

Reading Scores by Grade

	9th	10th	11th	12th
school_name				
Bailey High School	81.303	80.907	80.946	80.912
Cabrera High School	83.676	84.253	83.788	84.288
Figueroa High School	81.199	81.409	80.640	81.385
Ford High School	80.633	81.263	80.404	80.662
Griffin High School	83.369	83.707	84.288	84.014
Hernandez High School	80.867	80.660	81.396	80.857
Holden High School	83.677	83.325	83.816	84.699
Huang High School	81.290	81.512	81.417	80.306
Johnson High School	81.261	80.773	80.616	81.228
Pena High School	83.807	83.612	84.336	84.591
Rodriguez High School	80.993	80.630	80.865	80.376
Shelton High School	84.123	83.442	84.374	82.782
Thomas High School	83.729	84.254	83.586	83.831
Wilson High School	83.940	84.021	83.765	84.318
Wright High School	83.833	83.813	84.156	84.073

Scores by School Spending

	Avg Math Score	Avg Reading Score	% Passing Math	% Passing Reading	% Overall Passing
Spending Ranges (Per Student)					
<\$585	83.455399	83.933814	93.460096	96.610877	90.369459
585–630	81.899826	83.155286	87.133538	92.718205	81.418596
630–645	78.518855	81.624473	73.484209	84.391793	62.857656
645–680	76.997210	81.027843	66.164813	81.133951	53.526855

Scores by School Size

	Avg Math Score	Avg Reading Score	% Passing Math	% Passing Reading	% Overall Passing
School Size					
Small(<1000)	83.82	83.93	93.55	96.10	89.88
Medium(1000-2000)	83.37	83.86	93.60	96.79	90.62
Large(2000-5000)	77.75	81.34	69.96	82.77	58.29

Scores by School Type

	Avg Math Score	Avg Reading Score	% Passing Math	% Passing Reading	% Overall Passing
type					
Charter	83.41	83.90	93.70	96.65	90.56
District	76.99	80.96	66.52	80.91	53.70