

Analysis of Student Performance Based

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SQL Queries and Results

Create Data Base and Import Data from Sample - Superstore.csv file.....

```
C:\Users\siddh>Cd C:\sqlite  
  
C:\sqlite>sqlite3 StudentsPerformance.db  
SQLite version 3.46.0 2024-05-23 13:25:27 (UTF-16 console I/O)  
Enter ".help" for usage hints.  
sqlite> .mode csv  
sqlite> .import "C:/Users/siddh/OneDrive/Documents/StudentsPerformance.csv"  
students  
sqlite> .tables  
students
```

```
C:\sqlite>sqlite3 StudentsPerformance.db  
SQLite version 3.46.0 2024-05-23 13:25:27 (UTF-16 console I/O)  
Enter ".help" for usage hints.  
sqlite> .mode csv  
sqlite> .import "C:/Users/siddh/OneDrive/Documents/StudentsPerformance.csv" students  
sqlite> .tables  
students  
sqlite> |
```

Query 1: Filter by Gender

```
SELECT * FROM students WHERE gender = 'male';  
SELECT * FROM students WHERE gender = 'female';
```

OutPut

```
sqlite> SELECT * FROM students WHERE gender = 'male';  
male|group A|associate's degree|free/reduced|none|47|57|44  
male|group C|some college|standard|none|76|78|75  
male|group B|some college|free/reduced|none|40|43|39  
male|group D|high school|free/reduced|completed|64|64|67  
male|group C|associate's degree|standard|none|58|54|52  
male|group D|associate's degree|standard|none|40|52|43  
male|group A|some college|standard|completed|78|72|70  
male|group C|high school|standard|none|88|89|86  
male|group C|master's degree|free/reduced|completed|46|42|46  
male|group D|high school|standard|none|66|69|63  
male|group D|some college|standard|none|44|54|5
```

```

C:\sqlite>sqlite3 StudentsPerformance.db
SQLite version 3.46.0 2024-05-23 13:25:27 (UTF-16 console I/O)
Enter ".help" for usage hints.
sqlite> SELECT * FROM students WHERE gender = 'male';
male|group A|associate's degree|free/reduced|none|47|57|44
male|group C|some college|standard|none|76|78|75
male|group B|some college|free/reduced|none|40|43|39
male|group D|high school|free/reduced|completed|64|64|67
male|group C|associate's degree|standard|none|58|54|52
male|group D|associate's degree|standard|none|40|52|43
male|group A|some college|standard|completed|78|72|70
male|group C|high school|standard|none|88|89|86
male|group C|master's degree|free/reduced|completed|46|42|46
male|group D|high school|standard|none|66|69|63
male|group D|some college|standard|none|44|54|53

```

2. Aggregate Scores by Race/Ethnicity

```
SELECT "race/ethnicity", AVG("math score") AS avg_math_score, AVG("reading score") AS avg_reading_score, AVG("writing score") AS avg_writing_score FROM students GROUP BY "race/ethnicity";
```

Output:

```

group A|61.6292134831461|64.6741573033708|62.6741573033708
group B|63.4526315789474|67.3526315789474|65.6
group C|64.4639498432602|69.1034482758621|67.8275862068966
group D|67.3625954198473|70.030534351145|70.1450381679389
group E|73.8214285714286|73.0285714285714|71.4071428571429

```

```

sqlite> SELECT "race/ethnicity", AVG("math score") AS avg_math_score, AVG("reading score") AS avg_reading_score, AVG("writing score") AS avg_writing_score FROM students GROUP BY "race/ethnicity";
"group A",61.6292134831461,64.6741573033708,62.6741573033708
"group B",63.4526315789474,67.3526315789474,65.6
"group C",64.4639498432602,69.1034482758621,67.8275862068966
"group D",67.3625954198473,70.030534351145,70.1450381679389
"group E",73.8214285714286,73.0285714285714,71.4071428571429
sqlite>

```

3. Count Students by Parental Level of Education

```
SELECT "parental level of education", COUNT(*) AS student_count FROM students GROUP BY "parental level of education";
```

OutPut

```

associate's degree|222
bachelor's degree|118
high school|196
master's degree|59
some college|226
some high school|179

```

```
sqlite> SELECT "parental level of education", COUNT(*) AS student_count FROM students GROUP BY "parental level of education";
"associate's degree",222
"bachelor's degree",118
"high school",196
"master's degree",59
"some college",226
"some high school",179
sqlite>
```

4. Compare Scores Between Students with Standard and Free/Reduced Lunch

SELECT lunch, AVG("math score") AS avg_math_score, AVG("reading score") AS avg_reading_score, AVG("writing score") AS avg_writing_score FROM students GROUP BY lunch;
Output
free/reduced 58.9211267605634 64.6535211267606 63.0225352112676 standard 70.0341085271318 71.6542635658915 70.8232558139535

```
sqlite> SELECT lunch, AVG("math score") AS avg_math_score, AVG("reading score") AS avg_reading_score, AVG("writing score") AS avg_writing_score FROM students GROUP BY lunch;
free/reduced,58.9211267605634,64.6535211267606,63.0225352112676
standard,70.0341085271318,71.6542635658915,70.8232558139535
sqlite> |
```

5. Identify Top Performers (Top 10% by Average Score)

WITH ranked_students AS (SELECT *, (("math score" + "reading score" + "writing score") / 3.0) AS average_score, NTILE(10) OVER (ORDER BY (("math score" + "reading score" + "writing score") / 3.0) DESC) AS decile FROM students)SELECT * FROM ranked_students WHERE decile = 1;
Output
female group E bachelor's degree standard none 100 100 100 100.0 1 male group E bachelor's degree standard completed 100 100 100 100.0 1 female group E associate's degree standard none 100 100 100 100.0 1 female group E bachelor's degree standard completed 99 100 100 99.66666666666667 1 female group D some high school standard completed 97 100 100 99.0 1 female group D some college standard none 98 100 99 99.0 1 female group C bachelor's degree standard completed 96 100 100 98.66666666666667 1 male group D some college standard completed 100 97 99 98.66666666666667 1 male group E associate's degree free/reduced completed 100 100 93 97.66666666666667 1 female group E master's degree standard completed 94 99 100 97.66666666666667 1 female group D bachelor's degree free/reduced completed 93 100 100 97.66666666666667 1 female group E bachelor's

degree|free/reduced|completed|92|100|100|97.333333333333|1
female|group D|master's degree|standard|none|92|100|100|97.333333333333|1
female|group C|bachelor's degree|standard|completed|92|100|99|97.0|1
female|group C|associate's degree|standard|completed|96|96|99|97.0|1
female|group B|bachelor's degree|standard|none|97|97|96|96.666666666667|1
female|group E|some college|standard|none|100|92|97|96.333333333333|1
female|group A|some high school|standard|completed|92|100|97|96.333333333333|1
female|group D|bachelor's degree|standard|none|89|100|100|96.333333333333|1
female|group E|associate's degree|standard|completed|93|100|95|96.0|1
female|group D|master's degree|standard|none|87|100|100|95.666666666667|1
female|group D|high school|standard|completed|88|99|100|95.666666666667|1
female|group E|high school|standard|none|99|93|90|94.0|1
male|group C|associate's degree|standard|completed|87|100|95|94.0|1
male|group A|some college|standard|completed|100|96|86|94.0|1
female|group E|master's degree|standard|completed|88|99|95|94.0|1
male|group C|associate's degree|standard|none|97|93|91|93.666666666667|1
female|group D|master's degree|free/reduced|completed|85|95|100|93.333333333333|1
female|group C|associate's degree|standard|none|91|95|94|93.333333333333|1
male|group A|bachelor's degree|standard|none|91|96|92|93.0|1
female|group B|master's degree|standard|none|90|95|93|92.666666666667|1
male|group C|bachelor's degree|standard|completed|96|90|92|92.666666666667|1
male|group B|some college|standard|completed|91|96|91|92.666666666667|1
female|group C|some college|standard|completed|88|95|94|92.333333333333|1
female|group E|associate's degree|standard|completed|95|89|92|92.0|1
female|group E|associate's degree|standard|none|87|94|95|92.0|1
female|group B|some college|standard|completed|88|95|92|91.666666666667|1
female|group D|associate's degree|standard|completed|88|92|95|91.666666666667|1
female|group D|some college|standard|completed|82|97|96|91.666666666667|1
male|group A|associate's degree|standard|completed|97|92|86|91.666666666667|1
male|group C|bachelor's degree|standard|completed|94|90|91|91.666666666667|1
male|group C|associate's degree|standard|completed|98|87|90|91.666666666667|1
male|group C|some college|standard|completed|98|86|90|91.333333333333|1
female|group C|some college|standard|completed|88|93|93|91.333333333333|1
female|group D|some high school|standard|none|81|97|96|91.333333333333|1
female|group B|associate's degree|standard|completed|94|87|92|91.0|1
male|group B|associate's degree|standard|completed|91|89|92|90.666666666667|1
female|group C|bachelor's degree|standard|none|83|93|95|90.333333333333|1
female|group B|associate's degree|standard|completed|90|90|91|90.333333333333|1
female|group E|associate's degree|standard|none|84|95|92|90.333333333333|1
female|group C|some high school|standard|completed|85|92|93|90.0|1
female|group C|some college|standard|completed|87|89|94|90.0|1
female|group C|associate's degree|standard|none|85|89|95|89.666666666667|1
female|group D|some college|standard|completed|85|86|98|89.666666666667|1
female|group B|high school|standard|none|87|95|86|89.333333333333|1
female|group C|associate's
degree|free/reduced|completed|82|93|93|89.333333333333|1
female|group B|master's degree|free/reduced|completed|77|97|94|89.333333333333|1
female|group A|associate's degree|standard|none|82|93|93|89.333333333333|1
male|group E|associate's degree|standard|completed|97|82|88|89.0|1
male|group E|some college|standard|completed|99|87|81|89.0|1

male|group C|some college|standard|completed|93|84|90|89.0|1
male|group B|some high school|standard|completed|94|86|87|89.0|1
female|group A|some high school|standard|completed|85|90|92|89.0|1
male|group E|some college|standard|none|97|87|82|88.6666666666667|1
female|group C|some college|standard|none|82|90|94|88.6666666666667|1
female|group C|bachelor's degree|standard|completed|77|94|95|88.6666666666667|1
female|group D|associate's degree|standard|none|82|95|89|88.6666666666667|1
male|group E|some college|free/reduced|none|93|90|83|88.6666666666667|1
female|group D|associate's degree|standard|none|85|91|89|88.3333333333333|1
female|group C|bachelor's degree|standard|none|86|92|87|88.3333333333333|1
male|group B|bachelor's degree|free/reduced|completed|87|90|88|88.3333333333333|1
female|group E|some college|standard|none|87|85|93|88.3333333333333|1
female|group D|master's degree|standard|none|78|91|96|88.3333333333333|1
female|group D|associate's degree|free/reduced|completed|77|89|98|88.0|1
female|group E|master's degree|standard|none|81|92|91|88.0|1
male|group C|high school|standard|none|88|89|86|87.6666666666667|1
male|group D|master's degree|free/reduced|completed|84|89|90|87.6666666666667|1
female|group C|some college|standard|none|84|87|91|87.3333333333333|1
male|group D|associate's degree|standard|none|90|87|85|87.3333333333333|1
male|group E|associate's degree|free/reduced|none|90|90|82|87.3333333333333|1
female|group E|some college|standard|completed|86|85|91|87.3333333333333|1
female|group E|associate's degree|standard|none|85|92|85|87.3333333333333|1
female|group C|associate's degree|standard|none|91|86|84|87.0|1
female|group E|associate's degree|standard|completed|79|88|94|87.0|1
female|group B|high school|standard|none|81|91|89|87.0|1
male|group E|associate's degree|standard|completed|94|85|82|87.0|1
female|group D|bachelor's degree|free/reduced|none|78|90|93|87.0|1
male|group C|master's degree|standard|completed|91|85|85|87.0|1
female|group C|bachelor's degree|standard|completed|79|92|89|86.6666666666667|1
male|group E|some high school|standard|none|94|88|78|86.6666666666667|1
male|group D|master's degree|standard|none|95|81|84|86.6666666666667|1
female|group D|some high school|standard|completed|80|92|88|86.6666666666667|1
female|group C|master's degree|standard|completed|81|91|87|86.3333333333333|1
male|group E|high school|standard|completed|87|91|81|86.3333333333333|1
female|group D|some college|standard|none|80|90|89|86.3333333333333|1
male|group D|some high school|standard|completed|89|88|82|86.3333333333333|1
female|group C|bachelor's degree|standard|none|81|88|90|86.3333333333333|1
male|group E|master's degree|standard|none|90|85|84|86.3333333333333|1
female|group C|some college|free/reduced|none|77|90|91|86.0|1
female|group C|associate's degree|standard|completed|83|85|90|86.0|1

```

sqlite> WITH ranked_students AS ( SELECT *, ((("math score" + "reading score" + "writing score") / 3.0)
AS average_score, NTILE(10) OVER (ORDER BY ((("math score" + "reading score" + "writing score") / 3.0)
DESC) AS decile FROM students)SELECT * FROM ranked_students WHERE decile = 1;
female,"group E","bachelor's degree",standard,none,100,100,100,100.0,1
male,"group E","bachelor's degree",standard,completed,100,100,100,100.0,1
female,"group E","associate's degree",standard,none,100,100,100,100.0,1
female,"group E","bachelor's degree",standard,completed,99,100,100,99.6666666666667,1
female,"group D","some high school",standard,completed,97,100,100,99.0,1
female,"group D","some college",standard,none,98,100,99,99.0,1
female,"group C","bachelor's degree",standard,completed,96,100,100,98.6666666666667,1
male,"group D","some college",standard,completed,100,97,99,98.6666666666667,1
male,"group E","associate's degree",free/reduced,completed,100,100,93,97.6666666666667,1
female,"group E","master's degree",standard,completed,94,99,100,97.6666666666667,1
female,"group D","bachelor's degree",free/reduced,completed,93,100,100,97.6666666666667,1
female,"group E","bachelor's degree",free/reduced,completed,92,100,100,97.3333333333333,1
female,"group D","master's degree",standard,none,92,100,100,97.3333333333333,1
female,"group C","bachelor's degree",standard,completed,92,100,99,97.0,1
female,"group C","associate's degree",standard,completed,96,96,99,97.0,1
female,"group B","bachelor's degree",standard,none,97,97,96,96.6666666666667,1
female,"group E","some college",standard,none,100,92,97,96.3333333333333,1
female,"group A","some high school",standard,completed,92,100,97,96.3333333333333,1
female,"group D","bachelor's degree",standard,none,89,100,100,96.3333333333333,1
female,"group E","associate's degree",standard,completed,93,100,95,96.0,1
female,"group D","master's degree",standard,none,87,100,100,95.6666666666667,1
female,"group D","high school",standard,completed,88,99,100,95.6666666666667,1
female,"group E","high school",standard,none,99,93,90,94.0,1

```