

Reporting with SQL Part 3 Notes

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1 Counting Results

- **Syntax 1:** `SELECT COUNT(column name) FROM table name;`
 - Counts all non-null values
- **Syntax 2:** `SELECT COUNT(*) FROM table name;`
 - counts all rows in a table
- **Syntax 2:** `SELECT COUNT(DISTINCT column name) FROM table;`
 - Counts all items with distinct value in a column

Example:

```
1 SELECT COUNT(DISTINCT category) FROM products;  
2  
3  
4 SELECT COUNT(*) FROM customers ORDER BY id DESC LIMIT 1;  
5
```

2 Exercise 1

- Solution included in *exercise_1.sql*

3 Counting Groups of Rows

- **Syntax:** `SELECT COUNT(column name) FROM table name GROUP BY column name with common value;`
- is almost like using keyword `distinct`
 - `SELECT COUNT(DISTINCT column name) FROM table;`
- but, group by allows to add additional columns

Example:

```
1  SELECT category, COUNT(*) AS product_count FROM products GROUP BY  
2  category;
```

```
1  -- SELECT <column> FROM <table> GROUP BY <column>;  
2  
3  SELECT category, COUNT(*) AS product_count FROM products GROUP BY category;  
4
```

ResetRun

category	product_count
Books	20
Clothing	6
Electronics	3

4 Exercise 2

- Solution included in *exercise_2.sql*

5 Getting the Grand Total

- SUM

- **Syntax:** `SELECT SUM(numeric column) FROM table name;`

Example:

```
1  SELECT SUM(cost) AS total_spend, user_id FROM orders GROUP BY
2  user_id;
```

```
1  -- SUM(<column>)
2
3  SELECT SUM(cost) AS total_spend, user_id FROM orders GROUP BY user_id;
4
```

total_spend	user_id
885.5000000000003	1
776.6000000000004	2
1456.7700000000002	5
917.8100000000002	10
237.93000000000006	11
30.97	12
1244.5700000000004	13

- SUM with GROUP BY and WHERE

- Not possible, but there is an alternative, HAVING
- **Syntax:** `SELECT SUM(numeric column name) AS alias FROM table name GROUP BY another column name HAVING alias operator value;`

Example:

```
1  SELECT SUM(cost) AS total_spend, user_id FROM orders
2  GROUP BY user_id
3  HAVING total_spend > 250
4  ORDER BY total_spend DESC;
5
```

```
1 -- SUM(<column>)
2
3 SELECT SUM(cost) AS total_spend, user_id FROM orders
4                                     GROUP BY user_id
5                                     HAVING total_spend > 250
6                                     ORDER BY total_spend DESC;
```

total_spend	user_id
1928.6700000000003	20
1456.7700000000002	5
1324.5300000000004	21
1244.5700000000004	13
1027.71	14
917.8100000000002	10
885.5000000000003	1
776.6000000000004	2