HAVING Clause

Unlike where clause which imposes conditions on columns Having clause enables you to specify conditions that filter which group results appear in the results.

Syntax

```
SELECT column_name(s)
FROM table_name
WHERE condition
GROUP BY column_name(s)
HAVING condition
ORDER BY column_name(s);
```

Description

- Used with aggregate functions
- Must follow GROUP BY clause in the query

Aggregate Functions

- SQL aggregation is the task of collecting a set of values to return a single value.
- An aggregate function is a function where the values of multiple rows are grouped together as input on certain criteria to form a single value of more significant meaning.

Aggregate Functions Examples

Suppose this are the table given to us

Students	**table**	
rollno	name	class
1	Sanskriti	TE
1	Shree	BE
2	Harry	TE
3	John	TE
3	Shivani	TE

purchase	**table**	
item	price	customer_name
Pen	10	Sanskriti
Bag	1000	Sanskriti
Vegetables	500	Sanskriti

Shoes	5000	Sanskriti
Water Bottle	800	XYZ
Mouse	120	ABC
Sun Glasses	1350	ABC

AVG function

Calculates `average` of the given column of values

```
SELECT AVG(price) AS Avg_Purchase, customer_name
FROM purchase
GROUP BY customer_name;
```

Avg_Purchase	customer_name
1627.5000	Sanskriti

SUM function

Calculates `sum` of values of given column.

```
SELECT SUM(price) AS Total_Bill, customer_name
FROM purchase
GROUP BY customer_name;
```

Total_Bill	customer_name
6510	Sanskriti

COUNT function

Gives `count` of entries/ values in given column.

```
SELECT COUNT(item) AS Total_Items, customer_name
FROM purchase
GROUP BY customer_name;
```

Total_Items	customer_name
4	Sanskriti

MAX function

Return `maximum` value from the number of values in the column.

```
SELECT MAX(price) AS Highest_Purchase, customer_name
FROM purchase
GROUP BY customer_name;
```

Highest_Purchase	customer_name
5000	Sanskriti

MIN function

Return `minimum` value from the number of values in the column.

```
SELECT MIN(price) AS Lowest_Purchase, customer_name
FROM purchase
GROUP BY customer_name;
```

Lowest_Purchase	customer_name
10	Sanskriti

Having clause Examples

Example 1

```
SELECT COUNT(class) AS strength, class
FROM Students
GROUP BY class
HAVING COUNT(class) > 2;
```

Above query gives number of students in a class `having` number of students > 2

strength	class
4	TE

Example 2

```
SELECT customer_name, MIN(price) AS MIN_PURCHASE
FROM purchase
GROUP BY customer_name
HAVING MIN(price) > 10;
```

Above query finds `minimum` price which is > 10

customer_name	MIN_PURCHASE
XYZ	800
ABC	120

Example 3

```
SELECT customer_name, AVG(price) AS Average_Purchase
FROM purchase
GROUP BY customer_name
```

```
HAVING AVG(price) > 550
ORDER BY customer_name DESC;
```

Above query calculates `average` of price and prints customer name and average price which is greater than 550 with descending `order` of customer names.

customer_name	Average_Purchase
XYZ	800.0000
Sanskriti	1627.5000
ABC	735.0000

Example 4

```
SELECT customer_name, SUM(price) AS Total_Purchase
FROM purchase
WHERE customer_name
LIKE "S%"
GROUP BY customer_name
HAVING SUM(price) > 1000;
```

Calculates `SUM` of price and returns customer name and sum > 1000.

customer_name	Total_Purchase
Sanskriti	6510