

Module 4: Advanced DDL & DML

Lesson 3: Grouping Results sets

- Aggregate functions
- Eliminate duplicates from result sets
- Describe how to further restrict a result set

Aggregate Functions

Aggregate Functions - An aggregate function performs a calculation on a set of values, and returns a single value.

Aggregate functions are often used with the GROUP BY clause of the SELECT statement.

Use Aggregate Functions as Expressions only in following situations:

- The select list of a **SELECT** statement (either a subquery or an outer query).
- A HAVING clause.

- SUM
- AVG
- COUNT
- GROUPING
- GROUPING_ID
- MAX
- MIN
- VAR
- VARP

Eliminate Duplicates

`SELECT COUNTRY from AUTHOR order by country`

100 %

Results Messages

	COUNTRY
1	Canada
2	India
3	India
4	India
5	India
6	USA

`SELECT distinct COUNTRY from AUTHOR order by country`

100 %

Results Messages

	COUNTRY
1	Canada
2	India
3	USA

Using Group BY

```
SELECT COUNTRY, Count(COUNTRY) from AUTHOR  
Group by COUNTRY
```

100 %

Results Messages

	COUNTRY	(No column name)
1	Canada	1
2	India	4
3	USA	1

```
SELECT COUNTRY, Count(COUNTRY) as [Author count] from AUTHOR  
Group by COUNTRY
```

.00 %

Results Messages

	COUNTRY	Author count
1	Canada	1
2	India	4
3	USA	1

Using Group BY Having Clause

```
SELECT COUNTRY, Count(COUNTRY) as [Author count] from AUTHOR  
Group by COUNTRY  
having count(COUNTRY) > 3
```

100 %

Results Messages

	COUNTRY	Author count
1	India	4



Summary

- Eliminate Duplicates from result set
- Restrict result set with Group by