Informatics Practices Class XII (As per CBSE Board)

Chapter 4 Database query using sql-group by, having

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New

syllabus

2023-24

MySQL Order By clause is used to sort the table data in either Ascending order or Descending order. By default, data is not inserted into Tables in any order unless we have an index.

So, If we want to retrieve the data in any particular order, we have to sort it by using MySQL Order By statement.

Syntax:-SELECT Column_Names

FROM Table_Name

ORDER BY {Column1}[ASC | DESC] {Column2}[ASC | DESC]

MySQL Order by– e.g.

Suppose we are having student table with following data.

nysql> select * from student;											
rollno	name	class	marks								
	freya	10	88								
: 2 : 3	: mohak : vishal	: 10	84								
: 4	¦ vimal	i 10	82 8								
l 5	l anil	: 2	82 8								

Now we write the query – select * from student order by class;

n	ysql> se	1.	ect * fi	°01	m studer	lt	order by	class;
	rollno		name		class		marks	
	2		mohak		1		22	
	01(freya		10		88	
	34	ł	vishal vimal		10 10		84 : 82 :	
							+	

Query result will be in ascending order of class. If we not specify asc/desc query then ascending clause is applied by default

MySQL Order by– e.g.

Suppose we are having student table with following data.

ysqız se				n stude							
				- 1							
				U. → _ U. 40U.2→ -2→							
-1		fnena		-1 (5)							
		mohak									
		un ierlaa 1		-1 (21)		52 - CL					
		vimal									
						9.2					
	_										

Now we write the query – select * from student order by class desc;

Н	ysql> se	1.6	ect * fr	n stude	t order	ъу	class	desc;
	rollno		name	class	marks			
	1		freya	10	88			
	3		visĥal	10	84			
	- 4		vimal	10	82			
			anil	2	82			
_	2		mohak	1	99			

Query result will be in descending order of class

MySQL Order by – e.g.

Suppose we are having student table with following data.

nysql> select * from student;											
rollno	name	class	marks								
1 2	freya mohak	10 1	88 99								
3	vishal	10	84								
4	vimal	19	김 성종 김								

Now we write query-select * from student order by class asc, marks asc;

mysql>	> se	lect * fr	or	n studer	n 1	t order	. h	y class	asc,marks	asc;
roll	lno	name		class		marks				
	25431	mohak anil vimal vishal freya		1 2 10 10 10		99 82 82 84 88				

Query result will be ascending order of class and if same class exists then ordering will done on marks column(ascending order)

MySQL Order by– e.g.

Suppose we are having student table with following data.

nysql> select * from student;											
rollno	name	class	marks								
1 2	freya mohak	10 1	88 99								
. 3	vishal	i 10	84								
: 4	l vimal	10	: 82 :								
1 5	: anil	. 2	82								

Now we write query-select * from student order by class asc, marks desc;

m	ysql> so	e 1	ect * fr	om	stude	n	t order by	class	asc,marks	desc;
	rollno		name		class		marks			
	25 1 3 4		mohak anil freya vishal vimal		10 10 10		99 82 88 88 84 82			
		-+		+		-	+			

Query result will be ascending order of class and if same class exists then ordering will done on marks column(descending order)

The GROUP BY clause groups a set of rows/records into a set of summary rows/records by values of columns or expressions. It returns one row for each group.

We often use the GROUP BY clause with aggregate functions such as SUM, AVG, MAX, MIN, and COUNT. The aggregate function that appears in the SELECT clause provides information about each group.

The GROUP BY clause is an optional clause of the SELECT statement.

Syntax –

SELECT 1, c2,..., cn, aggregate_function(ci)

FROM table WHERE where conditions GROUP BY c1 , c2,...,cn;

Here c1,c2,ci,cn are column name

MySQL group by – e.g.

Suppose we are having student table with following data.

nysql> select * from student;											
rollno	name	: class	i marks i								
1 2 3 4	freya mohak vishal vimal	10 10 10 10	88 99 84 82								
: 5	anil 🛛	: 2	82								

Now we write query-select class from student group by class;

mysql> select	class	from	student	group	by	class;
class						
++ 1						
: 2: : 10:						
++						

Query result will be unique occurrences of class values, just similar to use distinct clause like (select distinct class from student).

MySQL GROUP BY with aggregate functions

The aggregate functions allow us to perform the calculation of a set of rows and return a single value. The GROUP BY clause is often used with an aggregate function to perform calculation and return a single value for each subgroup.

For example, if we want to know the number of student in each class, you can use the COUNT function with the GROUP BY clause as follows:Suppose we are having student table with muscules select as from students

rollno	name	lass	marks
1 2 3 4 5	freya mohak vishal vimal anil	10 1 10 10 2	88 99 84 82 82

Now we write query-select class,count(*) from student group by class;

iysql> se	elect class,	.count(*)	from	student	group	by	class;
class	count(*)						
1 2 10	1 1 3						

Query result will be unique occurrences of class values along with counting of students (records) of each class (sub group).

MySQL GROUP BY with aggregate functions

we are having student table with following data.

nysql> select * from student;									
rolln		name		class		marks			
		freya mohak vishal vimal anil		10 10 10 10 2		894 894 82 82 82			

Now we write query-select class,avg(marks) from student group by class;

ıysql≻ s	e	lect class,a	vg(marks)	from	student	group	bу	class;
class	i	avg(marks)						
1 2	- #-	99.0000 82.0000	+ 					
10	•	84.6667	+					

Query result will be unique occurrences of class values along with average marks of each class(sub group).

MySQL GROUP BY with aggregate functions (with where and order by clause)

we are having student table with following data.

Ц	mysql> select * from student;								
	rollno	name	class	marks					
	123	freya mohak vishal	10 10 10	88 99 84					
	45	: vimal anil	: 10 : 2	82					

Now we write query–select class,avg(marks) from student where class<10 group by class order by marks desc;



The HAVING clause is used in the SELECT statement to specify filter conditions for a group of rows or aggregates. The HAVING clause is often used with the GROUP BY clause to filter groups based on a specified condition. To filter the groups returned by GROUP BY clause, we use a HAVING clause. WHERE is applied before GROUP BY, HAVING is applied after (and can filter on aggregates)

MySQL Group by with Having

MySQL GROUP BY with aggregate functions

we are having student table with following data.

Ц	ysql> select * from student;									
	rollno	name	i c	lass		arks				
		freya		10		88				
	E N	vishal	L	10		84				
	45	; vimal ! anil		102		82 82				

Now we write query—select class,avg(marks) from student group by class having avg(marks)<90;

mysql> select class,aug(marks) from student group by class having aug(marks)<90; class | aug(marks) | 2 | 82.0000 | 10 | 84.6667 | Query result will be unique occurrences of class values along with average marks of each class(sub group) and each class having average marks<90. Visit : python.mykvs.in for regular updates
 MySQL Group by with Having

MySQL GROUP BY with aggregate functions

we are having student table with following data.

mysql> select * from student;									
	rollno	name		class		marks			
	 	freya		10		88			
	3	vishal		τġ		84			
	45	: vimal ! anil		19		82			

Now we write query—select class,avg(marks) from student group by class having count(*)<3;

mysql> select class,avg(marks) from student group by class having count(*)<3; +-----+ | class | avg(marks) | +----++---+ | 1 | 99.0000 | | 2 | 82.0000 | +----++--+++

Query result will be unique occurrences of class values along with average marks of each class(sub group) and each class having less than 3 rows.