**Database Systems Lab - 14CS2012**

**REGISTER NO :** **UR14CS228**

**DATE : 22-08-16**

**EXPERIMENT NO : 3**

**Video URL :** [**https://youtu.be/nqQuIvhjIFY**](https://youtu.be/nqQuIvhjIFY)

**AIM:**

To use Aggregate and Built – in Functions, Group by and Order by functions in an database table.

**DESCRIPTION:**

**GROUP BY:** Optional section of SELECT statement used to group data based on distinct values of

specified columns.Creates a data set, containing several groups based on a condition.

**ORDER BY:** Used with select statement only. to view data from a table in sorted order.Rows

retrieved from the table can be sorted in either ascending or descending order.Sorting is based on

columns specified in select statement.Default sort order is ascending order

**AGGREGATE FUNCTION:** Functions that take a collection / set of values & returns a single value.

Used as expressions in the select statement to return summary data.

**SYNTAX:**

**1. Display the number of customers.**

SELECT COUNT(customer\_id) FROM Customer

| COUNT(customer\_id) |  |
| --- | --- |
| 7 |  |

**2.What is the maximum quantity that has been ordered?**

SELECT MAX(ordered\_quantity) FROM Orderline

| MAX(ordered\_quantity) |  |
| --- | --- |
| 40100 |  |

**3.Display the minimum, maximum and average prices of the product.**

SELECT MAX(price) AS max, min(price) AS min, avg(price) AS average FROM Product

| max | min | average |  |
| --- | --- | --- | --- |
| 50 | 10 | 27.7778 |  |

**4.Display the average price of each product.**

SELECT avg(price),product\_description FROM Product GROUP BY product\_description

| [avg(price)](http://localhost/phpmyadmin/sql.php?db=labexp&table=Product&sql_query=SELECT+avg(price)%2Cproduct_description+FROM+Product+GROUP+BY+product_description++%0AORDER+BY+avg(price)+ASC&session_max_rows=25&is_browse_distinct=0&token=6441816376ac338504c0ee3177eb6a69) | [product\_description](http://localhost/phpmyadmin/sql.php?db=labexp&table=Product&sql_query=SELECT+avg(price)%2Cproduct_description+FROM+Product+GROUP+BY+product_description++%0AORDER+BY+`Product`.`product_description`+ASC&session_max_rows=25&is_browse_distinct=0&token=6441816376ac338504c0ee3177eb6a69) |  |
| --- | --- | --- |
| 30.0000 | Book Shelf |  |
| 30.0000 | Duplex Boo |  |
| 40.0000 | Duplex Tab |  |
| 50.0000 | Keyboard |  |
| 15.0000 | Manager's |  |
| 20.0000 | Office Cha |  |
| 10.0000 | Office Des |  |
| 40.0000 | Table Lamp |  |

**5.Find the total quantity ordered for each product.**

SELECT sum(ordered\_quantity), product\_id FROM Orderline GROUP BY product\_id

| [sum(ordered\_quantity)](http://localhost/phpmyadmin/sql.php?db=labexp&table=Orderquantity&sql_query=SELECT+sum(ordered_quantity)%2C+product_id+FROM+Orderquantity+GROUP+BY+product_id++%0AORDER+BY+sum(ordered_quantity)+ASC&session_max_rows=25&is_browse_distinct=0&token=6441816376ac338504c0ee3177eb6a69) | [product\_id](http://localhost/phpmyadmin/sql.php?db=labexp&table=Orderquantity&sql_query=SELECT+sum(ordered_quantity)%2C+product_id+FROM+Orderquantity+GROUP+BY+product_id++%0AORDER+BY+`Orderquantity`.`product_id`+ASC&session_max_rows=25&is_browse_distinct=0&token=6441816376ac338504c0ee3177eb6a69) |  |
| --- | --- | --- |
| 56560 | 2000 |  |
| 20500 | 3000 |  |
| 30005 | 3001 |  |
| 10000 | 4000 |  |
| 41100 | 4001 |  |

**6.Find out the no. of orders placed on each date.**

SELECT Orders.order\_date, sum(Orderline.ordered\_quantity) FROM Orders,Orderline WHERE Orders.order\_id=Orderline.order\_id GROUP BY Orders.order\_date

| [order\_date](http://localhost/phpmyadmin/sql.php?db=labexp&table=Orders&sql_query=SELECT+Orders.order_date%2C+sum(Orderquantity.ordered_quantity)+FROM+Orders%2COrderquantity+WHERE+Orders.order_id%3DOrderquantity.order_id+GROUP+BY+Orders.order_date++%0AORDER+BY+`Orders`.`order_date`+ASC&session_max_rows=25&is_browse_distinct=0&token=6441816376ac338504c0ee3177eb6a69) | [sum(Orderquantity.ordered\_quantity)](http://localhost/phpmyadmin/sql.php?db=labexp&table=Orders&sql_query=SELECT+Orders.order_date%2C+sum(Orderquantity.ordered_quantity)+FROM+Orders%2COrderquantity+WHERE+Orders.order_id%3DOrderquantity.order_id+GROUP+BY+Orders.order_date++&session_max_rows=25&is_browse_distinct=0&token=6441816376ac338504c0ee3177eb6a69) |  |
| --- | --- | --- |
| 01-OCT-14 | 30000 |  |
| 02-OCT-14 | 34560 |  |
| 03-OCT-14 | 1000 |  |
| 10-OCT-14 | 92605 |  |

**7.Find out how many products are ordered in each order.**

SELECT order\_id, sum(ordered\_quantity) FROM Orderline GROUP BY order\_id

| [order\_id](http://localhost/phpmyadmin/sql.php?db=labexp&table=Orderquantity&sql_query=SELECT+order_id%2C+sum(ordered_quantity)+FROM+Orderquantity+GROUP+BY+order_id++%0AORDER+BY+`Orderquantity`.`order_id`+ASC&session_max_rows=25&is_browse_distinct=0&token=6441816376ac338504c0ee3177eb6a69) | [sum(ordered\_quantity)](http://localhost/phpmyadmin/sql.php?db=labexp&table=Orderquantity&sql_query=SELECT+order_id%2C+sum(ordered_quantity)+FROM+Orderquantity+GROUP+BY+order_id++%0AORDER+BY+sum(ordered_quantity)+ASC&session_max_rows=25&is_browse_distinct=0&token=6441816376ac338504c0ee3177eb6a69) |
| --- | --- |
| 100 | 10000 |
| 101 | 20000 |
| 102 | 34560 |
| 103 | 1000 |
| 104 | 2000 |
| 105 | 30005 |
| 106 | 20500 |
| 107 | 40100 |

**8.Sort the order table based on the order date.**

SELECT \* FROM Orders GROUP BY order\_date

| [order\_id](http://localhost/phpmyadmin/sql.php?db=labexp&table=Orders&sql_query=SELECT+*+FROM+Orders+GROUP+BY+order_date++%0AORDER+BY+`Orders`.`order_id`+ASC&session_max_rows=25&is_browse_distinct=0&token=6441816376ac338504c0ee3177eb6a69) | [order\_date](http://localhost/phpmyadmin/sql.php?db=labexp&table=Orders&sql_query=SELECT+*+FROM+Orders+GROUP+BY+order_date++%0AORDER+BY+`Orders`.`order_date`+ASC&session_max_rows=25&is_browse_distinct=0&token=6441816376ac338504c0ee3177eb6a69) | [customer\_id](http://localhost/phpmyadmin/sql.php?db=labexp&table=Orders&sql_query=SELECT+*+FROM+Orders+GROUP+BY+order_date++%0AORDER+BY+`Orders`.`customer_id`+ASC&session_max_rows=25&is_browse_distinct=0&token=6441816376ac338504c0ee3177eb6a69) |
| --- | --- | --- |
| 100 | 01-OCT-14 | [1](http://localhost/phpmyadmin/sql.php?db=labexp&table=Customer&pos=0&sql_query=SELECT+*+FROM+`labexp`.`Customer`+WHERE+`customer_id`+%3D+'1'&token=6441816376ac338504c0ee3177eb6a69) |
| 102 | 02-OCT-14 | [3](http://localhost/phpmyadmin/sql.php?db=labexp&table=Customer&pos=0&sql_query=SELECT+*+FROM+`labexp`.`Customer`+WHERE+`customer_id`+%3D+'3'&token=6441816376ac338504c0ee3177eb6a69) |
| 103 | 03-OCT-14 | [2](http://localhost/phpmyadmin/sql.php?db=labexp&table=Customer&pos=0&sql_query=SELECT+*+FROM+`labexp`.`Customer`+WHERE+`customer_id`+%3D+'2'&token=6441816376ac338504c0ee3177eb6a69) |
| 104 | 10-OCT-14 | [1](http://localhost/phpmyadmin/sql.php?db=labexp&table=Customer&pos=0&sql_query=SELECT+*+FROM+`labexp`.`Customer`+WHERE+`customer_id`+%3D+'1'&token=6441816376ac338504c0ee3177eb6a69) |

**9.Display the products and their quantity and sort the result on the sum of quantity ordered in descending order**

SELECT product\_description, sum(product\_quantity)As quantity FROM Product GROUP BY product\_description ORDER BY quantity DESC;

| [product\_description](http://localhost/phpmyadmin/sql.php?db=labexp&table=Product&sql_query=SELECT+product_description%2C+sum(product_quantity)As+quantity+FROM+Product+GROUP+BY+product_description++%0AORDER+BY+`Product`.`product_description`+ASC&session_max_rows=25&is_browse_distinct=0&token=6441816376ac338504c0ee3177eb6a69) | [quantity](http://localhost/phpmyadmin/sql.php?db=labexp&table=Product&sql_query=SELECT+product_description%2C+sum(product_quantity)As+quantity+FROM+Product+GROUP+BY+product_description++%0AORDER+BY+`quantity`++ASC&session_max_rows=25&is_browse_distinct=0&token=6441816376ac338504c0ee3177eb6a69) |  |
| --- | --- | --- |
| Table Lamp | 50 |  |
| Duplex Tab | 40 |  |
| Manager's | 30 |  |
| Keyboard | 20 |  |
| Office Cha | 20 |  |
| Book Shelf | 20 |  |
| Duplex Boo | 10 |  |
| Office Des | 10 |  |

**10. Display the supplier details sorted by their ratings in descending order.**

SELECT supplier\_details FROM Suppliers ORDER BY supplier\_rating DESC;

| Wood supplier |
| --- |
| Duplex Supplier |
| Human resource |
| Keyboard Supplier |
| Office item Supplier |

**11. Display the names of all customers in uppercase.**

SELECT UPPER(customer\_name) FROM Customer

| [UPPER(customer\_name)](http://localhost/phpmyadmin/sql.php?db=labexp&table=Customer&sql_query=SELECT+UPPER(customer_name)+FROM+Customer++%0AORDER+BY+UPPER(customer_name)+ASC&session_max_rows=25&is_browse_distinct=0&token=6441816376ac338504c0ee3177eb6a69) |  |
| --- | --- |
| RICHARD JOHNS |  |
| MARY JOHNS |  |
| JOSEPH JOHNS |  |
| CATHY COOK |  |
| RICHARD NEWMAN |  |
| MARY SMITH |  |
| JOHN DOE |  |

**12. Find the number of months between ordered date of order\_id=103 and current date**

SELECT TIMESTAMPDIFF(MONTH,order\_date,curdate()) FROM Orders WHERE order\_id ='103'

| TIMESTAMPDIFF(MONTH,order\_date,curdate()) |  |
| --- | --- |
| *8* |  |

**13. Prefix the postal code with two zeroes**

UPDATE Customer SET pstal\_code=concat('00',pstal\_code)

| [pstal\_code](http://localhost/phpmyadmin/sql.php?db=labexp&table=Customer&sql_query=SELECT+pstal_code+FROM+Customer++%0AORDER+BY+`Customer`.`pstal_code`+ASC&session_max_rows=25&is_browse_distinct=0&token=6441816376ac338504c0ee3177eb6a69) |  |
| --- | --- |
| 0010059 |  |
| 0010039 |  |
| 0010056 |  |
| 0085719 |  |
| 0092010 |  |
| 0094032 |  |
| 0010059 |  |

**14. Display the substring “Newman” from “Richard Newman”.**

SELECT SUBSTRING\_INDEX(customer\_name," ",-1) FROM Customer WHERE customer\_name='Richard johns'

| SUBSTRING\_INDEX(customer\_name," ",-1) |  |
| --- | --- |
| Johns |  |

**15. Display the number of characters in the name of customers which ends with ‘e’.**

SELECT customer\_name, char\_length(customer\_name) AS length FROM Customer WHERE customer\_name LIKE '%e'

| customer\_name | length |  |
| --- | --- | --- |
| John Doe | 8 |  |

**Result:**

SQL queries using DDL and DCL commands are successfully executed.