

When you execute a SQL query the order in which the SQL directives get executed is :

FROM and JOIN clause :- Are first executed to determine the total working set that being queried such as subqueries and temporary tables.

WHERE clause :- After gathering total working set where constraints are applied to restrict to rows which satisfy required conditions.

GROUP BY clause :- selected data after where constraints is been divided in groups on the basis of common values.

HAVING clause :- Having is used on group by to discard groups which does not satisfy the condition.

SELECT clause :- Expressions in select part of the query are finally computed.

ORDER BY clause :- To sort the data in ascending or descending order, order by is used.

LIMIT clause :- Query ends with the appropriate number of rows to be visible for betterment of output.

However, HAVING and GROUP BY clauses can come after SELECT depending on the order it is specified in the query.

Question #2 Descriptive SQL Question

2 Marks

Can having clause be used without Group by Clause? Justify your answer

A query with HAVING clause should also have GROUP BY clause if you avoid GROUP BY all the rows by the WHERE clause return as a single group, because no grouping is performed between WHERE and HAVING clauses they cannot act independently of each other, HAVING acts like WHERE because it affects the rows in the single group rather than groups, except HAVING clause can still use aggregate.

Question #3 Executable SQL

4 Marks

Please Consider the below schemas/tables

customers

field		Type
Customer_id		int
Customer_name		varchar(15)
Credit_Limit		int

Customer_id	Customer_name	Credit_Limit
1	Liya	30000
2	Jane	35000

3	Tom	40000
4	John	30000
5	Lizzy	35000

product

field	Type
Product_id	char(3)
Product_name	varchar(24)
Price	int
Product_Category	varchar(45)

Product_id	Product_name	Price	Product_Category
P01	iphone 11	64000	Mobile
P02	ipad pro	81000	Tablet
P03	macbook air	75000	Laptop
P04	Sony 43 inch	55000	TV
P05	Samsung M31S	22000	Mobile

For each product category find out the lowest and highest price rates.

```

select product_category, max(price) max_price, min(price) min_price from product
group by product_category;

```

Affected_rows: 5

product_category	max_price	min_price
------------------	-----------	-----------

Mobile	64000	9000
Tablet	81000	81000
Laptop	75000	75000
TV	55000	45000
Accessories	8500	8500

Question #4 Executable SQL

3 Marks

Please Consider the below schemas/tables

customers

field	Type
Customer_id	int
Customer_name	varchar(15)
Credit_Limit	int

Customer_id	Customer_name	Credit_Limit
1	Liya	30000
2	Jane	35000
3	Tom	40000
4	John	30000
5	Lizzy	35000

product

field	Type
Product_id	char(3)
Product_name	varchar(24)
Price	int
Product_Category	varchar(45)

Product_id	Product_name	Price	Product_Category
P01	iphone 11	64000	Mobile

P02	ipad pro	81000	Tablet
P03	macbook air	75000	Laptop
P04	Sony 43 inch	55000	TV
P05	Samsung M31S	22000	Mobile

Display the top 5 customers with highest credit limit

```
select customer_name, credit_limit from customers order by credit_limit desc limit 5;
```

Affected_rows: 5

customer_name	credit_limit
Stonq	100000
Ford	90000
Ben	50000
Tom	40000
Jane	35000

Question #5 Executable SQL
8 Marks

Please Consider the below schemas/tables

customers

field	Type
Customer_id	int
Customer_name	varchar(15)
Credit_Limit	int

Customer_id	Customer_name	Credit_Limit
-------------	---------------	--------------

1	Liya	30000
2	Jane	35000
3	Tom	40000
4	John	30000
5	Lizzy	35000

product

field	Type
Product_id	char(3)
Product_name	varchar(24)
Price	int
Product_Category	varchar(45)

Product_id	Product_name	Price	Product_Category
P01	iphone 11	64000	Mobile
P02	ipad pro	81000	Tablet
P03	macbook air	75000	Laptop
P04	Sony 43 inch	55000	TV
P05	Samsung M31S	22000	Mobile

For Monsoon sale, the retailer has decided to sell products under no cost EMI. Based on the income, customers credit limit varies. For every customer find out products that they are eligible for no cost EMI

```

select cus.customer_id, cus.customer_name, cus.credit_limit, pro.product_name, pro.price
from customers cus
join product pro on pro.price < cus.credit_limit;

```


Affected_rows: 10

customer_id	customer_name	credit_limit	product_name	price
1	Liya	30000	Apple Pencil	8500
1	Liya	30000	logi Keyboard	8500
1	Liya	30000	Samsung A01	9000
1	Liya	30000	Samsung M31S	22000
2	Jane	35000	Apple Pencil	8500
2	Jane	35000	logi Keyboard	8500
2	Jane	35000	Samsung A01	9000
2	Jane	35000	Samsung M31S	22000
3	Tom	40000	Apple Pencil	8500
3	Tom	40000	logi Keyboard	8500

Question #6 Executable SQL4 Marks

Please Consider the below schemas/tables

travel_guide

field	Type
Location_id	int
Location_name	varchar(15)
Region_id	int

Location_id	Location_name	Region_id
1	Chennai	5
2	Bangkok	11
3	England	19

4	Hyderabad	5
5	India	9

Your customer is a Travel-Guide, with the limited amount of data given how do you get the Country and Continent names for all the cities?

```
select tg1.location_name from travel_guide tg1
join travel_guide tg2 on tg1.location_id = tg2.region_id;
```

Affected_rows: 10

location_name
India
Thailand
Europe
India
Asia
Italy
Thailand
England
Italy
Asia

Question #7 Executable SQL
Please Consider the below schemas/tables

4 Marks

clients

field	Type
Client_id	int
Client_name	varchar(25)
Client_Country	varchar(5)

Client_id	Client_name	Client_Country
101	Reg Inc	USA
102	NLP Inc	USA
103	DL Inc	USA
104	TS Inc	USA
105	Prg Inc	UK

projects

field	Type
Project_id	int
Project_name	varchar(35)
Employee_id	int
Client_id	int

Project_id	Project_name	Employee_id	Client_id
201	Credit Score	10	101
202	Defaulter Detection	4	101
203	Gaming App	2	105
304	Stock Trading	8	104

resources

field	Type
Employee_id	int
Employee_name	varchar(10)
Salary	int

Manager_id	int			
Job_Role	varchar(30)			

Employee_id	Employee_name	Salary	Manager_id	Job_Role
1	Liya	9000		Founder
2	Jane	5157	6	Associate
3	Tom	8450	1	CEO
4	John	5100	6	Associate
5	Lizzy	6300	9	Senior Manager

Using the below data, find out the reporting manager, client and project name for every employee in the organization

```

select manager_id, client_name, project_name from clients cli
join projects pro on cli.client_id = pro.client_id
join resources res on pro.employee_id = res.employee_id;

```

Affected_rows: 4

manager_id	client_name	project_name
6	Prg Inc	Gaming App
6	Reg Inc	Defaulter Detection
6	TS Inc	Stock Trading

6	Reg Inc	Credit Score
---	---------	--------------

Question #8 Executable SQL

4 Marks

Please Consider the below schemas/tables

clients

field	Type
Client_id	int
Client_name	varchar(25)
Client_Country	varchar(5)

Client_id	Client_name	Client_Country
101	Reg Inc	USA
102	NLP Inc	USA
103	DL Inc	USA
104	TS Inc	USA
105	Prg Inc	UK

projects

field	Type
Project_id	int
Project_name	varchar(35)
Employee_id	int
Client_id	int

Project_id	Project_name	Employee_id	Client_id
201	Credit Score	10	101
202	Defaulter Detection	4	101
203	Gaming App	2	105
304	Stock Trading	8	104

resources

resources

field	Type
Employee_id	int
Employee_name	varchar(10)
Salary	int
Manager_id	int
Job_Role	varchar(30)

Employee_id	Employee_name	Salary	Manager_id	Job_Role
1	Liya	9000		Founder
2	Jane	5157	6	Associate
3	Tom	8450	1	CEO
4	John	5100	6	Associate
5	Lizzy	6300	9	Senior Manager

The Director of a business vertical wants to know the current list of inactive clients. How will you get the same?

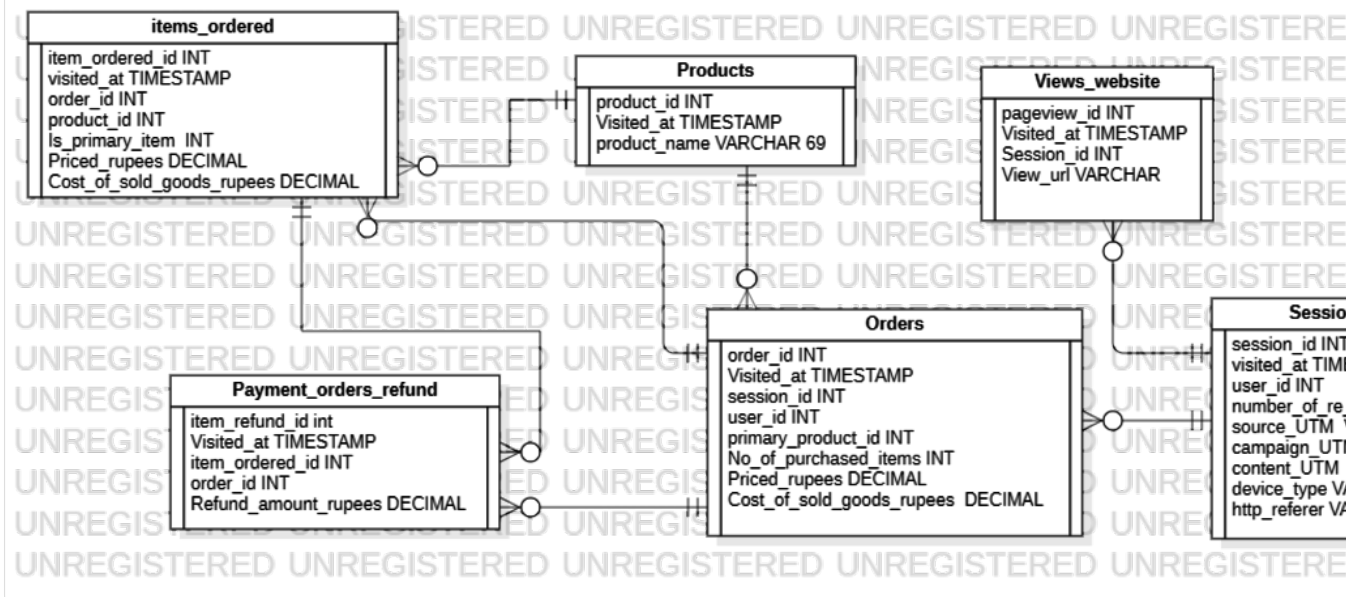
```
select cli.client_id, cli.client_name from clients cli
left join projects pro
on pro.client_id = cli.client_id
where project_id is null;
```

Affected_rows: 2

client_id	client_name
-----------	-------------

Question #9 Descriptive SQL Question

8 Marks



Our previous analysis/insights from the other fellow analysts™s, we want to bid our gsearch non brand desktop campaigns up on 2012-05-19. Could you pull weekly trends for both desktop and mobile so we can see the impact on volume? You can use 2012-06-22 until the bid changes as a baseline.

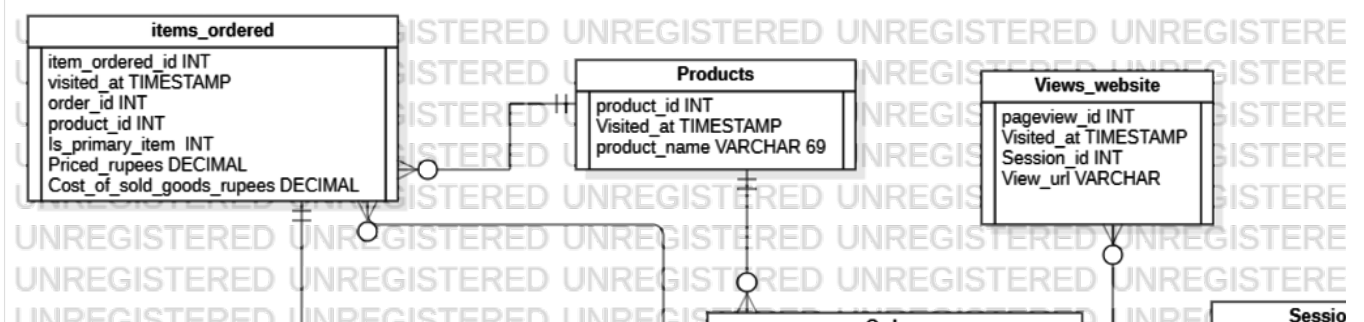
[Note : Write a query which met/resolve the business requirement]

```

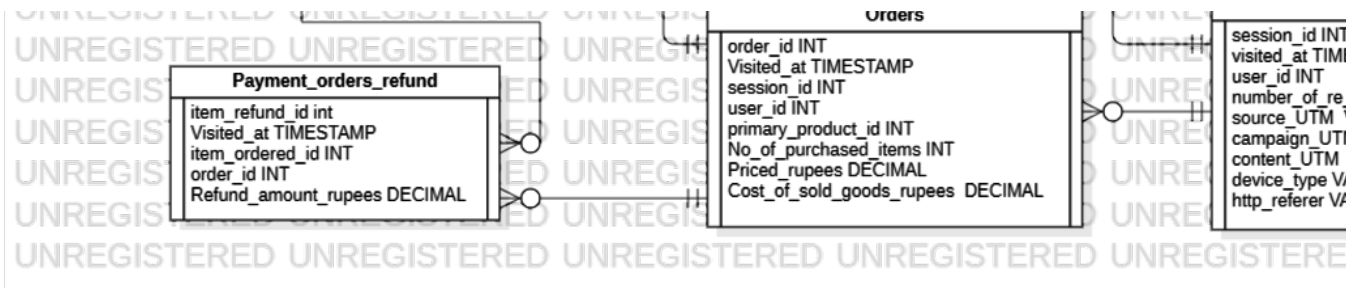
select min(date(s.visited_at)) as dts, count(distinct case when device_type = 'desktop' then
s.session_id
else null end) as desktopsess, count(distinct case when device_type = 'mobile' then s.session_id
else null end)
as mobilesess, count(distinct (o.order_id)) / count(distinct(s.session_id)) * 100 as conrate from
session_website s
left join orders o on s.session_id = o.session_id where s.visited_at > '2012-05-19' and
s.source_UTM = 'gsearch'
and s.campaign_UTM = 'nonbrand' group by yearweek(s.visited_at);
  
```

Question #10 Descriptive SQL Question

10 Marks



Session



Our team has been tested an updated billing page based on one of our fellow analyst analysis. Can you take a look and see whether /billing-2 is doing any better than the original /billing page? Weâ€™re wondering what % of sessions on those pages end up placing an order. we ran this test for all traffic, not just for our search visitors. [whose pageview_id >=53550 and visited at less than '2012-11-10']

[Note : Write a query which met/resolve the business requirement]

```

select billing_version_seen, count(distinct session_id) sess, count(distinct order_id) ord,
count(distinct session_id) / count(distinct order_id) bills from
(select vw.session_id, vw.view_url vurl, o.order_id from views_website vw left join orders o
on o.session_id = vw.session_id where vw.pageview_id >= 53550 and vw.visited_at < '2012-11-
10' and
vw.view_url in ('/billing', '/billing-2')) bills
group by billing_version_seen;
    
```

