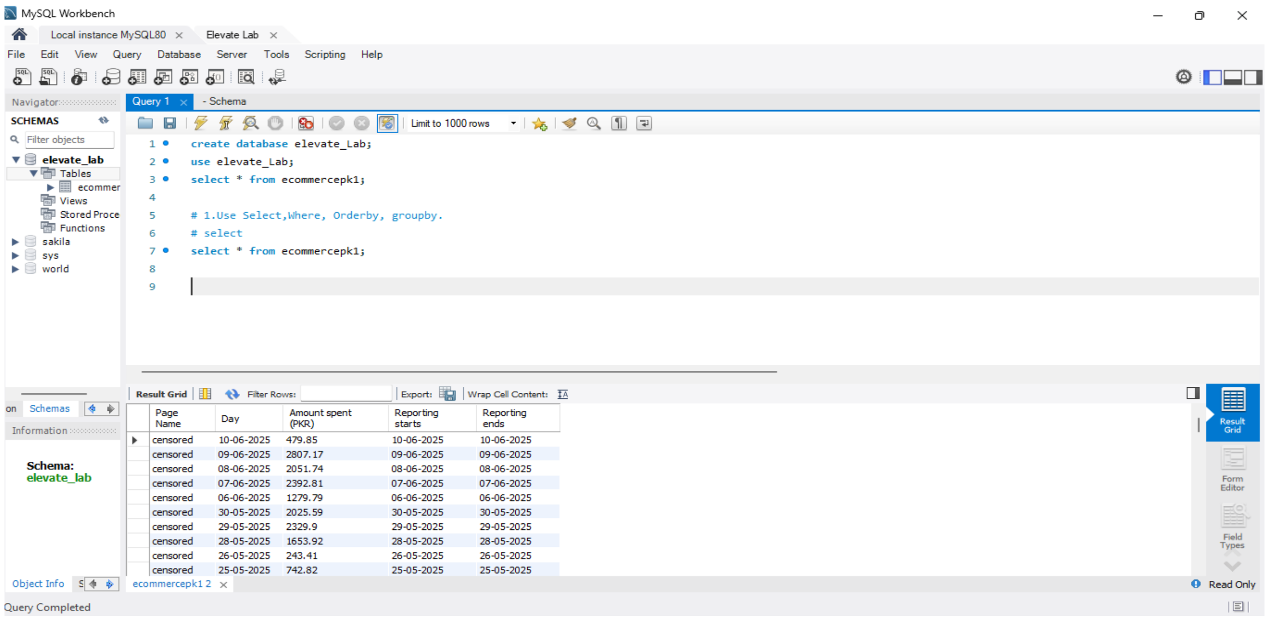
Step 1 : Create Database :



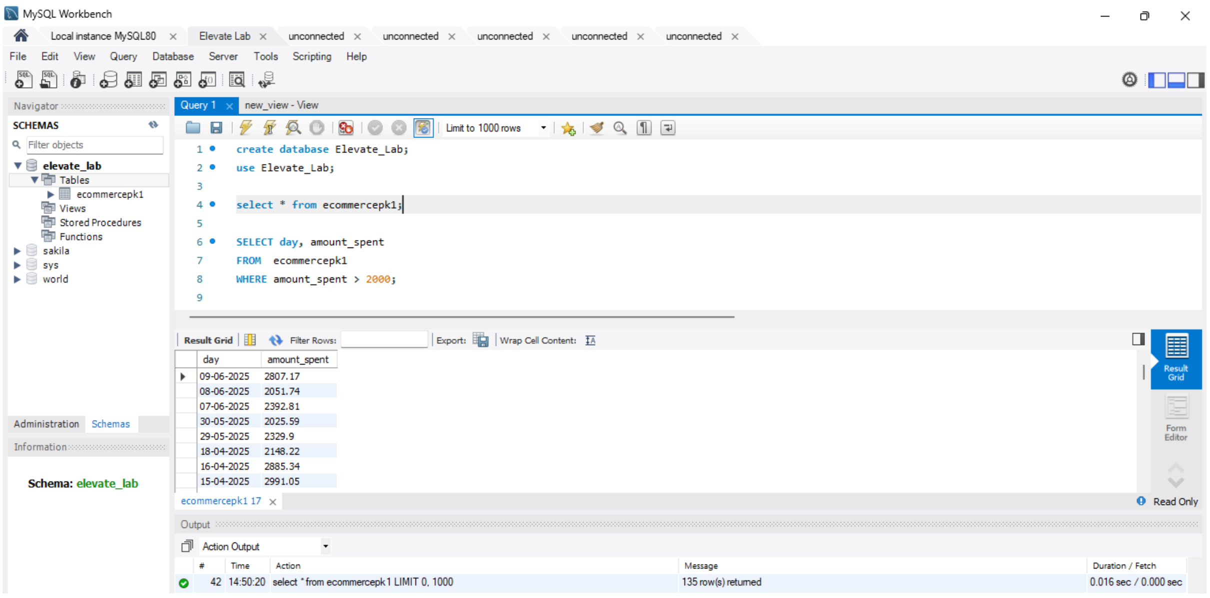
```sql
create database elevate_Lab;
use elevate_Lab;
select * from ecommercepk1;

# 1.Use Select,Where, Orderby, groupby.
# select
select * from ecommercepk1;

```

Page Name	Day	Amount spent (PKR)	Reporting starts	Reporting ends
censored	10-06-2025	479.85	10-06-2025	10-06-2025
censored	09-06-2025	2807.17	09-06-2025	09-06-2025
censored	08-06-2025	2051.74	08-06-2025	08-06-2025
censored	07-06-2025	2392.81	07-06-2025	07-06-2025
censored	06-06-2025	1279.79	06-06-2025	06-06-2025
censored	30-05-2025	2025.59	30-05-2025	30-05-2025
censored	29-05-2025	2329.9	29-05-2025	29-05-2025
censored	28-05-2025	1653.92	28-05-2025	28-05-2025
censored	26-05-2025	243.41	26-05-2025	26-05-2025
censored	25-05-2025	742.82	25-05-2025	25-05-2025

Schema: elevate_lab

Query Completed

Step 2 : Use Select , where :



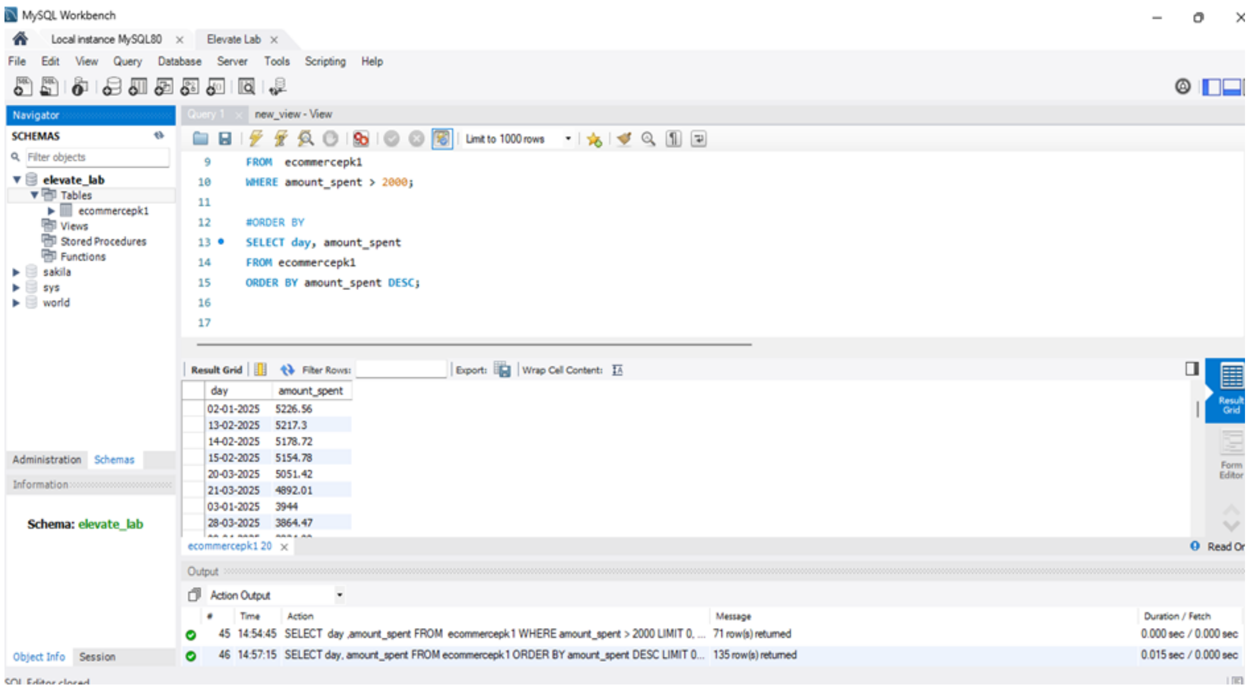
```sql
create database Elevate_Lab;
use Elevate_Lab;

select * from ecommercepk1;

SELECT day, amount_spent
FROM  ecommercepk1
WHERE amount_spent > 2000;

```

day	amount_spent
09-06-2025	2807.17
08-06-2025	2051.74
07-06-2025	2392.81
30-05-2025	2025.59
29-05-2025	2329.9
18-04-2025	2148.22
16-04-2025	2885.34
15-04-2025	2991.05

Schema: elevate_lab

#	Time	Action	Message	Duration / Fetch
42	14:50:20	select * from ecommercepk1 LIMIT 0, 1000	135 row(s) returned	0.016 sec / 0.000 sec

Step 3 : Use Order by:

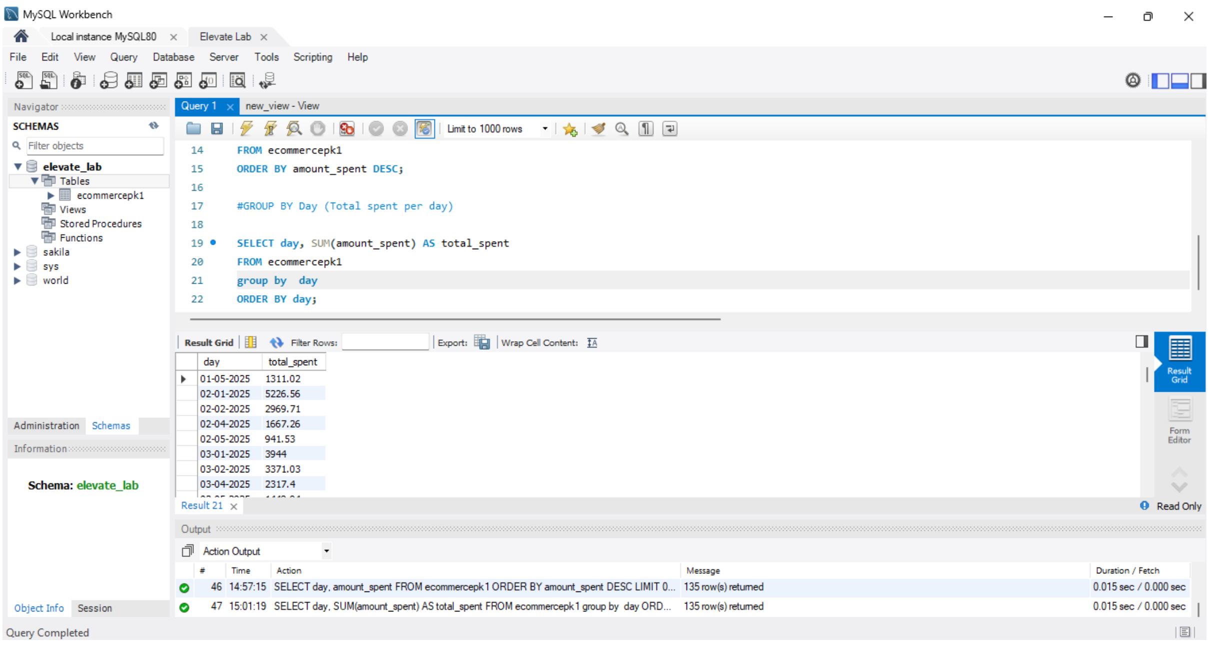


```
FROM  ecommercepk1
WHERE amount_spent > 2000;

#ORDER BY
SELECT day, amount_spent
FROM ecommercepk1
ORDER BY amount_spent DESC;
```

day	amount_spent
02-01-2025	5226.56
13-02-2025	5217.3
14-02-2025	5178.72
15-02-2025	5154.78
20-03-2025	5051.42
21-03-2025	4892.01
03-01-2025	3944
28-03-2025	3864.47

```
#   Time      Action                                                                          Message              Duration / Fetch
45  14:54:45  SELECT day ,amount_spent FROM ecommercepk1 WHERE amount_spent > 2000 LIMIT 0, ...  71 row(s) returned   0.000 sec / 0.000 sec
46  14:57:15  SELECT day, amount_spent FROM ecommercepk1 ORDER BY amount_spent DESC LIMIT 0...   135 row(s) returned  0.015 sec / 0.000 sec
```

Step 4 : Use Group by:

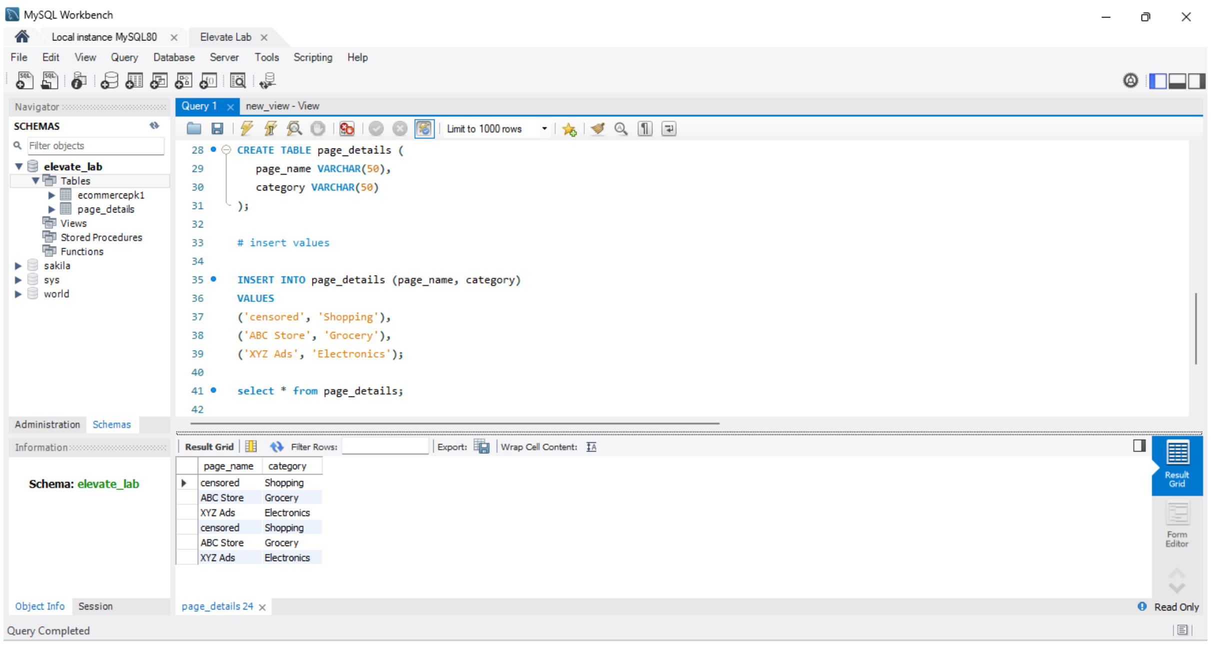


```
FROM ecommercepk1
ORDER BY amount_spent DESC;

#GROUP BY Day (Total spent per day)

SELECT day, SUM(amount_spent) AS total_spent
FROM ecommercepk1
group by  day
ORDER BY day;
```

day	total_spent
01-05-2025	1311.02
02-01-2025	5226.56
02-02-2025	2969.71
02-04-2025	1667.26
02-05-2025	941.53
03-01-2025	3944
03-02-2025	3371.03
03-04-2025	2317.4

```
#   Time      Action                                                                          Message              Duration / Fetch
46  14:57:15  SELECT day, amount_spent FROM ecommercepk1 ORDER BY amount_spent DESC LIMIT 0...   135 row(s) returned  0.015 sec / 0.000 sec
47  15:01:19  SELECT day, SUM(amount_spent) AS total_spent FROM ecommercepk1 group by  day ORD...  135 row(s) returned  0.015 sec / 0.000 sec
```

Step 5 : Create new Table and insert values:

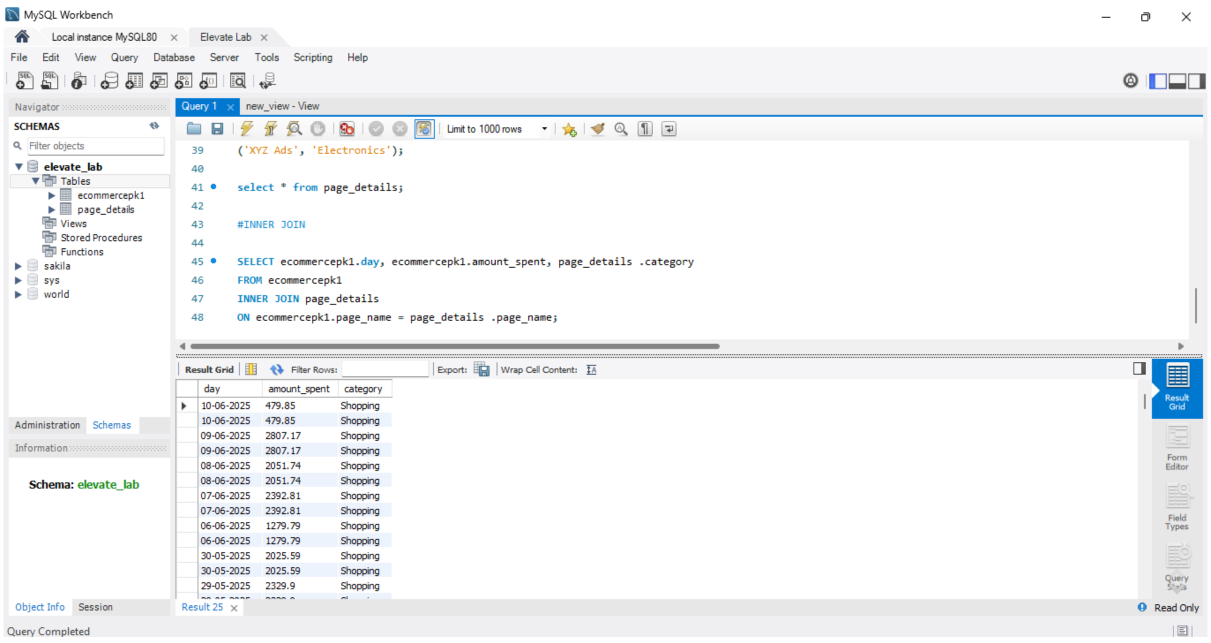


```sql
CREATE TABLE page_details (
    page_name VARCHAR(50),
    category VARCHAR(50)
);

# insert values

INSERT INTO page_details (page_name, category)
VALUES
('censored', 'Shopping'),
('ABC Store', 'Grocery'),
('XYZ Ads', 'Electronics');

select * from page_details;
```

page_name	category
censored	Shopping
ABC Store	Grocery
XYZ Ads	Electronics
censored	Shopping
ABC Store	Grocery
XYZ Ads	Electronics

Query Completed

Step 6 : Use join: Inner join :

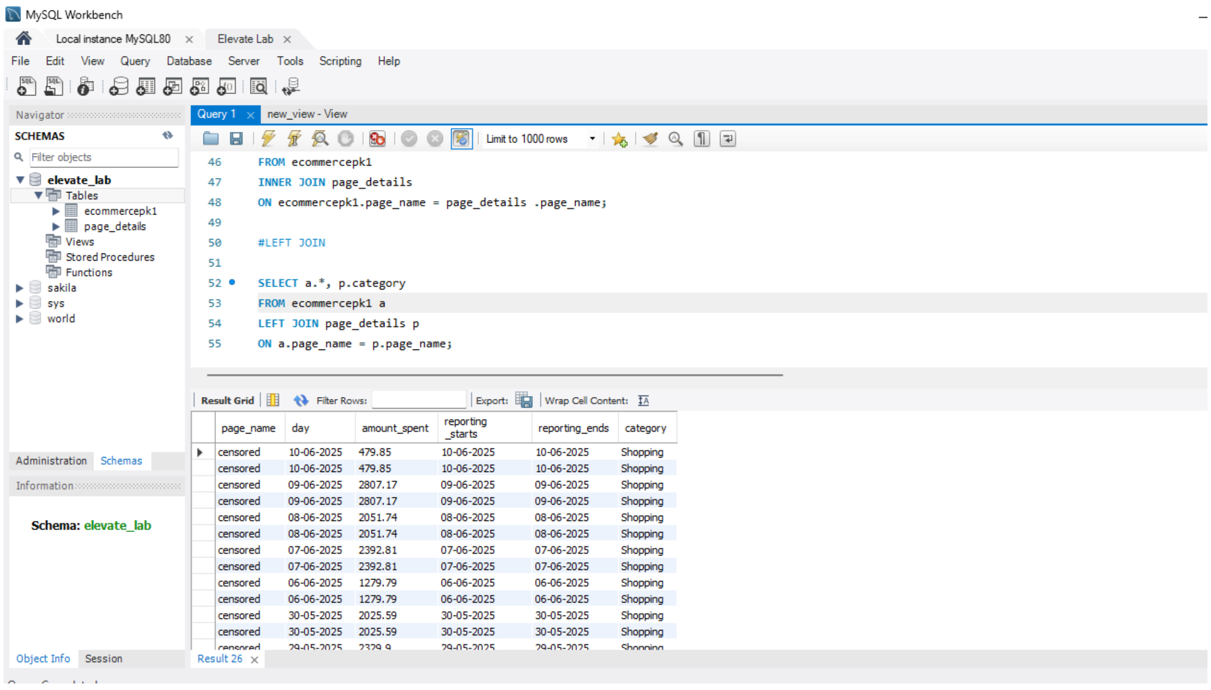


```sql
('XYZ Ads', 'Electronics');

select * from page_details;

#INNER JOIN

SELECT ecommercepk1.day, ecommercepk1.amount_spent, page_details .category
FROM ecommercepk1
INNER JOIN page_details
ON ecommercepk1.page_name = page_details .page_name;
```

day	amount_spent	category
10-06-2025	479.85	Shopping
10-06-2025	479.85	Shopping
09-06-2025	2807.17	Shopping
09-06-2025	2807.17	Shopping
08-06-2025	2051.74	Shopping
08-06-2025	2051.74	Shopping
07-06-2025	2392.81	Shopping
07-06-2025	2392.81	Shopping
06-06-2025	1279.79	Shopping
06-06-2025	1279.79	Shopping
30-05-2025	2025.59	Shopping
30-05-2025	2025.59	Shopping
29-05-2025	2329.9	Shopping

Query Completed

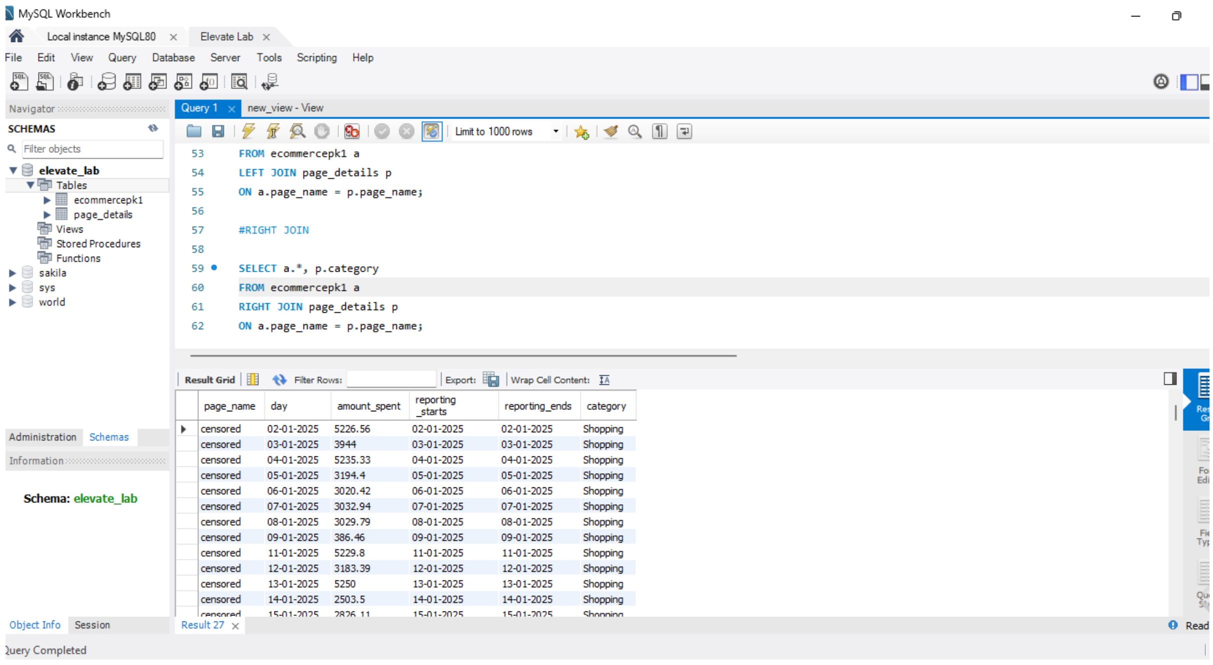
Step 6.1 : Left join :



```sql
FROM ecommercepk1
INNER JOIN page_details
ON ecommercepk1.page_name = page_details .page_name;

#LEFT JOIN

SELECT a.*, p.category
FROM ecommercepk1 a
LEFT JOIN page_details p
ON a.page_name = p.page_name;
```

page_name	day	amount_spent	reporting_starts	reporting_ends	category
censored	10-06-2025	479.85	10-06-2025	10-06-2025	Shopping
censored	10-06-2025	479.85	10-06-2025	10-06-2025	Shopping
censored	09-06-2025	2807.17	09-06-2025	09-06-2025	Shopping
censored	09-06-2025	2807.17	09-06-2025	09-06-2025	Shopping
censored	08-06-2025	2051.74	08-06-2025	08-06-2025	Shopping
censored	08-06-2025	2051.74	08-06-2025	08-06-2025	Shopping
censored	07-06-2025	2392.81	07-06-2025	07-06-2025	Shopping
censored	07-06-2025	2392.81	07-06-2025	07-06-2025	Shopping
censored	06-06-2025	1279.79	06-06-2025	06-06-2025	Shopping
censored	06-06-2025	1279.79	06-06-2025	06-06-2025	Shopping
censored	30-05-2025	2025.59	30-05-2025	30-05-2025	Shopping
censored	30-05-2025	2025.59	30-05-2025	30-05-2025	Shopping
censored	29-05-2025	2329.9	29-05-2025	29-05-2025	Shopping

Step 6.2 : Use Right Join :

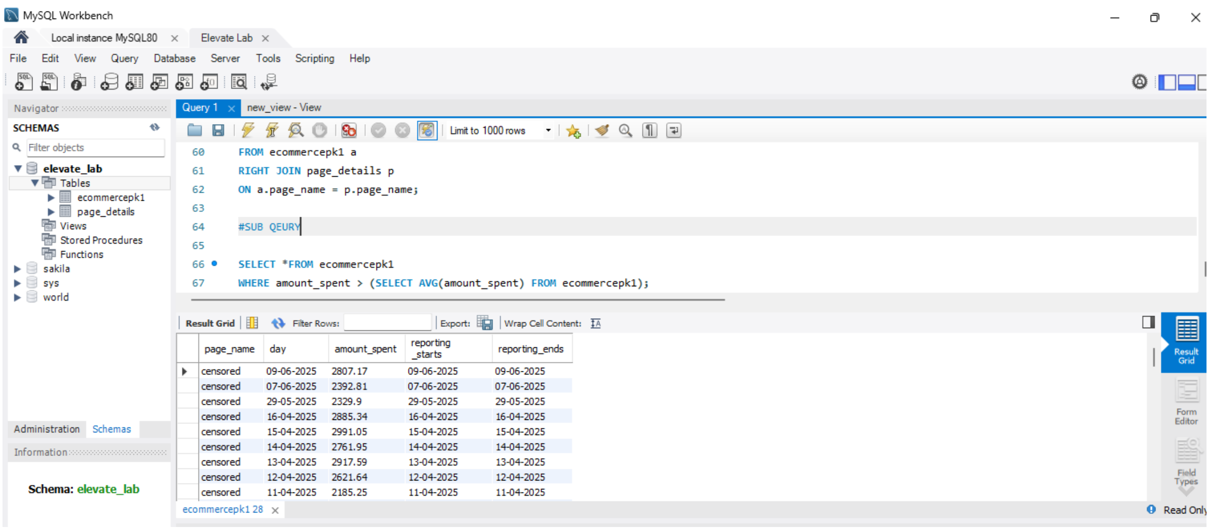


```sql
FROM ecommercepk1 a
LEFT JOIN page_details p
ON a.page_name = p.page_name;

#RIGHT JOIN

SELECT a.*, p.category
FROM ecommercepk1 a
RIGHT JOIN page_details p
ON a.page_name = p.page_name;
```

page_name	day	amount_spent	reporting_starts	reporting_ends	category
censored	02-01-2025	5226.56	02-01-2025	02-01-2025	Shopping
censored	03-01-2025	3944	03-01-2025	03-01-2025	Shopping
censored	04-01-2025	5235.33	04-01-2025	04-01-2025	Shopping
censored	05-01-2025	3194.4	05-01-2025	05-01-2025	Shopping
censored	06-01-2025	3020.42	06-01-2025	06-01-2025	Shopping
censored	07-01-2025	3032.94	07-01-2025	07-01-2025	Shopping
censored	08-01-2025	3029.79	08-01-2025	08-01-2025	Shopping
censored	09-01-2025	386.46	09-01-2025	09-01-2025	Shopping
censored	11-01-2025	5229.8	11-01-2025	11-01-2025	Shopping
censored	12-01-2025	3183.39	12-01-2025	12-01-2025	Shopping
censored	13-01-2025	5250	13-01-2025	13-01-2025	Shopping
censored	14-01-2025	2503.5	14-01-2025	14-01-2025	Shopping
censored	15-01-2025	2826.11	15-01-2025	15-01-2025	Shopping

Query Completed

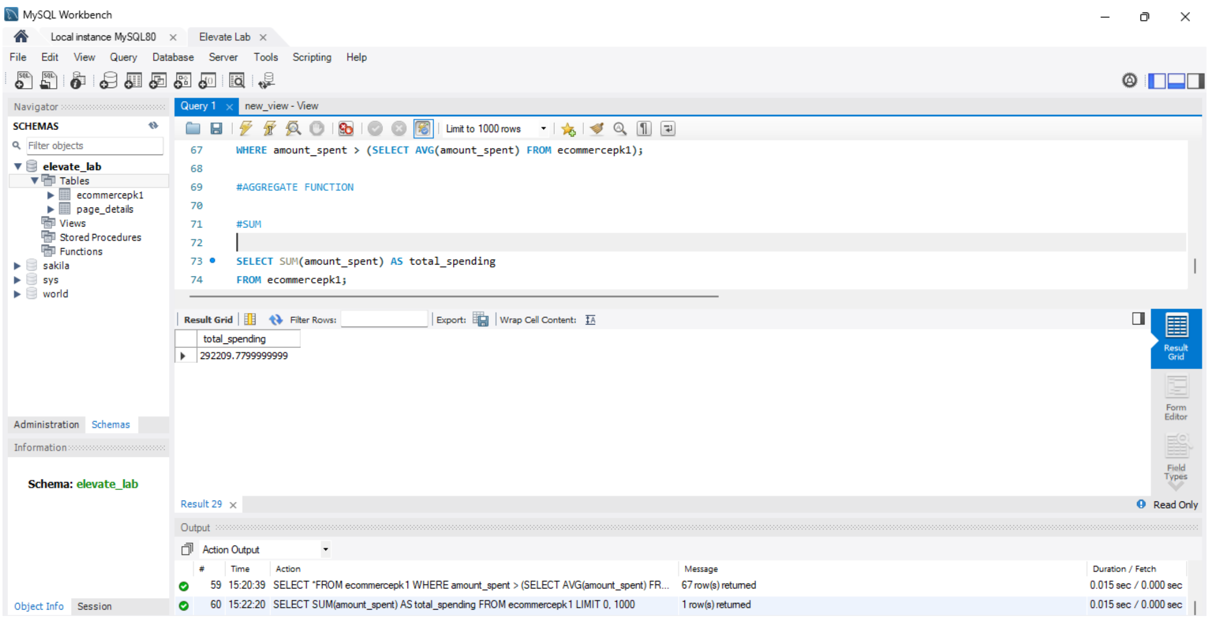
Step 7: Write Subqueries :



```
FROM ecommercepk1 a
RIGHT JOIN page_details p
ON a.page_name = p.page_name;

#SUB QEURY

SELECT *FROM ecommercepk1
WHERE amount_spent > (SELECT AVG(amount_spent) FROM ecommercepk1);
```

page_name	day	amount_spent	reporting _starts	reporting_ends
censored	09-06-2025	2807.17	09-06-2025	09-06-2025
censored	07-06-2025	2392.81	07-06-2025	07-06-2025
censored	29-05-2025	2329.9	29-05-2025	29-05-2025
censored	16-04-2025	2885.34	16-04-2025	16-04-2025
censored	15-04-2025	2991.05	15-04-2025	15-04-2025
censored	14-04-2025	2761.95	14-04-2025	14-04-2025
censored	13-04-2025	2917.59	13-04-2025	13-04-2025
censored	12-04-2025	2621.64	12-04-2025	12-04-2025
censored	11-04-2025	2185.25	11-04-2025	11-04-2025

Step 8 : Use Aggregate Function(sum) :

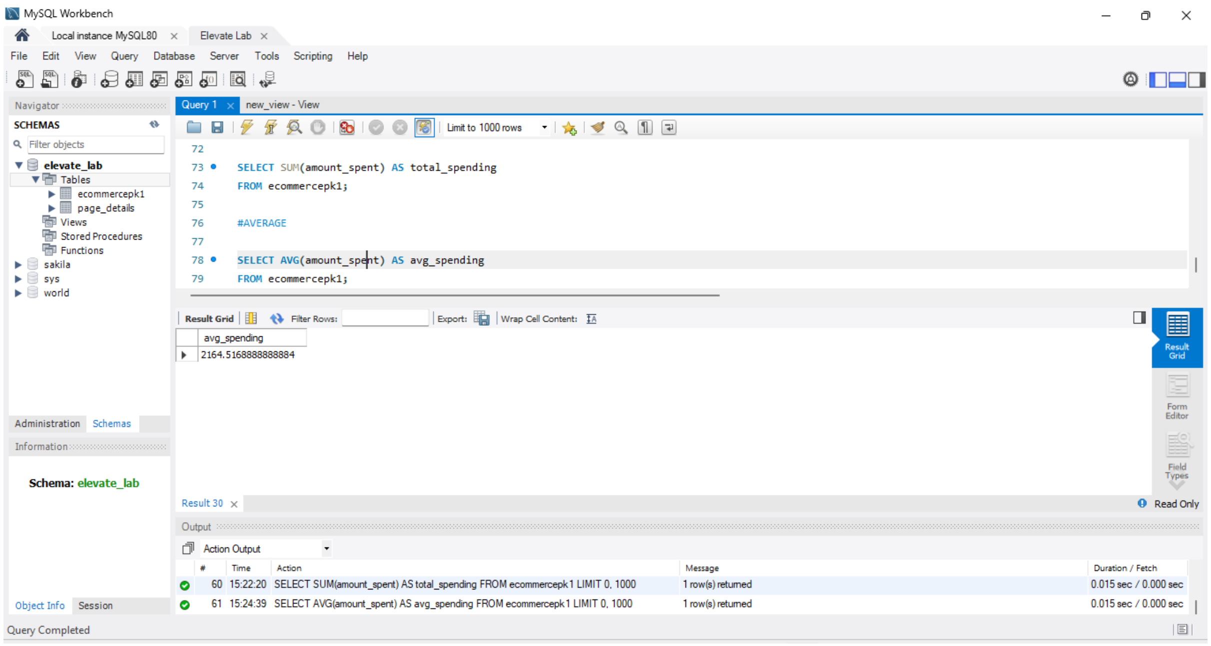


```
WHERE amount_spent > (SELECT AVG(amount_spent) FROM ecommercepk1);

#AGGREGATE FUNCTION

#SUM

SELECT SUM(amount_spent) AS total_spending
FROM ecommercepk1;
```

total_spending
292209.7799999999

```
Output
Action Output
#   Time      Action                                                                    Message             Duration / Fetch
59  15:20:39  SELECT *FROM ecommercepk1 WHERE amount_spent > (SELECT AVG(amount_spent) FR...  67 row(s) returned  0.015 sec / 0.000 sec
60  15:22:20  SELECT SUM(amount_spent) AS total_spending FROM ecommercepk1 LIMIT 0, 1000     1 row(s) returned   0.015 sec / 0.000 sec
```

Step 8.1 : Use Aggregate Function(Average) :



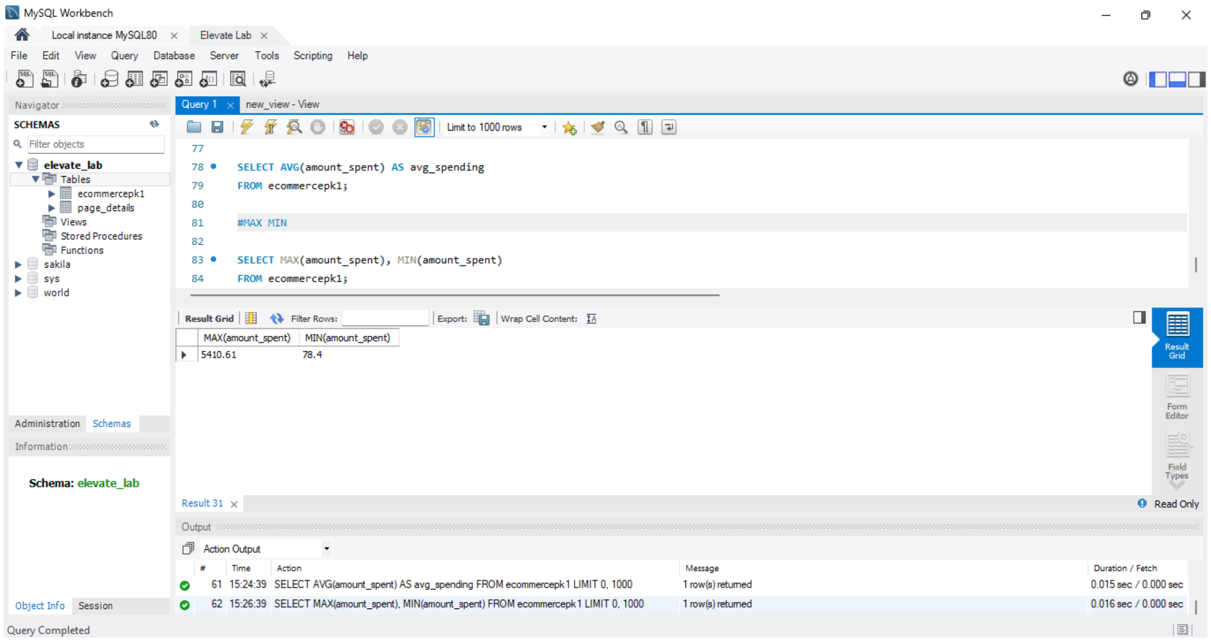
```
SELECT SUM(amount_spent) AS total_spending
FROM ecommercepk1;

#AVERAGE

SELECT AVG(amount_spent) AS avg_spending
FROM ecommercepk1;
```

```
avg_spending
2164.5168888888884
```

```
#   Time      Action                                                                  Message            Duration / Fetch
60  15:22:20  SELECT SUM(amount_spent) AS total_spending FROM ecommercepk1 LIMIT 0, 1000  1 row(s) returned  0.015 sec / 0.000 sec
61  15:24:39  SELECT AVG(amount_spent) AS avg_spending FROM ecommercepk1 LIMIT 0, 1000    1 row(s) returned  0.015 sec / 0.000 sec
```

Query Completed

Step 8.2 : Use Aggregate Function(Max,Min) :



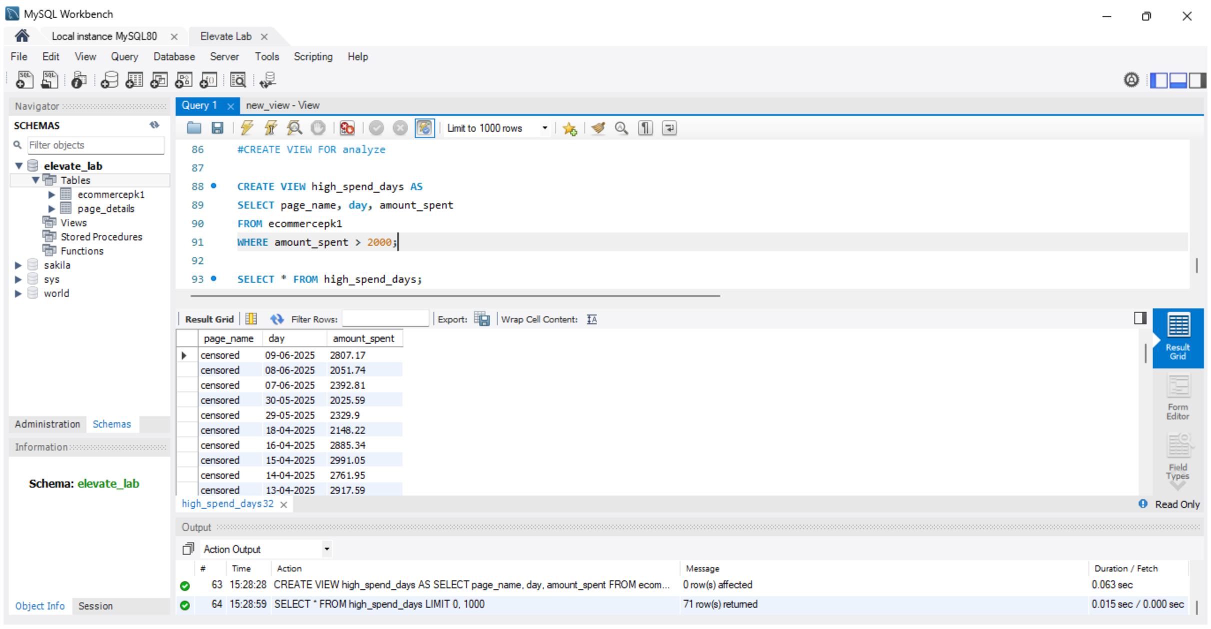
```
SELECT AVG(amount_spent) AS avg_spending
FROM ecommercepk1;

#MAX MIN

SELECT MAX(amount_spent), MIN(amount_spent)
FROM ecommercepk1;
```

```
MAX(amount_spent)  MIN(amount_spent)
5410.61            78.4
```

```
#   Time      Action                                                                    Message            Duration / Fetch
61  15:24:39  SELECT AVG(amount_spent) AS avg_spending FROM ecommercepk1 LIMIT 0, 1000      1 row(s) returned  0.015 sec / 0.000 sec
62  15:26:39  SELECT MAX(amount_spent), MIN(amount_spent) FROM ecommercepk1 LIMIT 0, 1000  1 row(s) returned  0.016 sec / 0.000 sec
```

Query Completed

Step 9 : Create View :

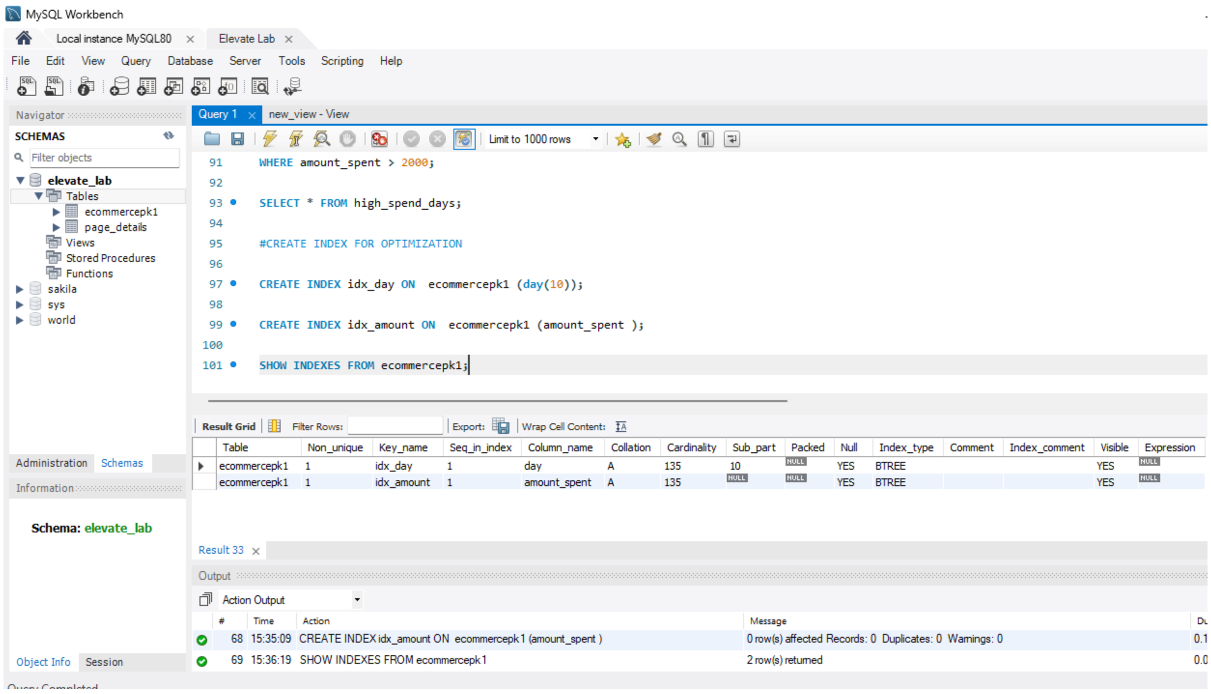


```
#CREATE VIEW FOR analyze

CREATE VIEW high_spend_days AS
SELECT page_name, day, amount_spent
FROM ecommercepk1
WHERE amount_spent > 2000;

SELECT * FROM high_spend_days;
```

page_name	day	amount_spent
censored	09-06-2025	2807.17
censored	08-06-2025	2051.74
censored	07-06-2025	2392.81
censored	30-05-2025	2025.59
censored	29-05-2025	2329.9
censored	18-04-2025	2148.22
censored	16-04-2025	2885.34
censored	15-04-2025	2991.05
censored	14-04-2025	2761.95
censored	13-04-2025	2917.59

```
#   Time      Action                                                                          Message              Duration / Fetch
63  15:28:28  CREATE VIEW high_spend_days AS SELECT page_name, day, amount_spent FROM ecom...  0 row(s) affected    0.063 sec
64  15:28:59  SELECT * FROM high_spend_days LIMIT 0, 1000                                      71 row(s) returned   0.015 sec / 0.000 sec
```

Step 10 : Index Analysis:



```
WHERE amount_spent > 2000;

SELECT * FROM high_spend_days;

#CREATE INDEX FOR OPTIMIZATION

CREATE INDEX idx_day ON  ecommercepk1 (day(10));

CREATE INDEX idx_amount ON  ecommercepk1 (amount_spent );

SHOW INDEXES FROM ecommercepk1;
```

Table	Non_unique	Key_name	Seq_in_index	Column_name	Collation	Cardinality	Sub_part	Packed	Null	Index_type	Comment	Index_comment	Visible	Expression
ecommercepk1	1	idx_day	1	day	A	135	10	NULL	YES	BTREE			YES	NULL
ecommercepk1	1	idx_amount	1	amount_spent	A	135	NULL	NULL	YES	BTREE			YES	NULL

```
#   Time      Action                                                Message                                                   Du
68  15:35:09  CREATE INDEX idx_amount ON  ecommercepk1 (amount_spent )  0 row(s) affected Records: 0  Duplicates: 0  Warnings: 0  0.1
69  15:36:19  SHOW INDEXES FROM ecommercepk1                        2 row(s) returned                                         0.0
```