MySQL - Understanding Database Query Performance Analysis

Objective: To understand one of the database query performance analysis techniques using EXPLAIN plan

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- Use a sample database with preloaded entities.
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- Understanding each component of EXPLAIN plan output.
- Summary

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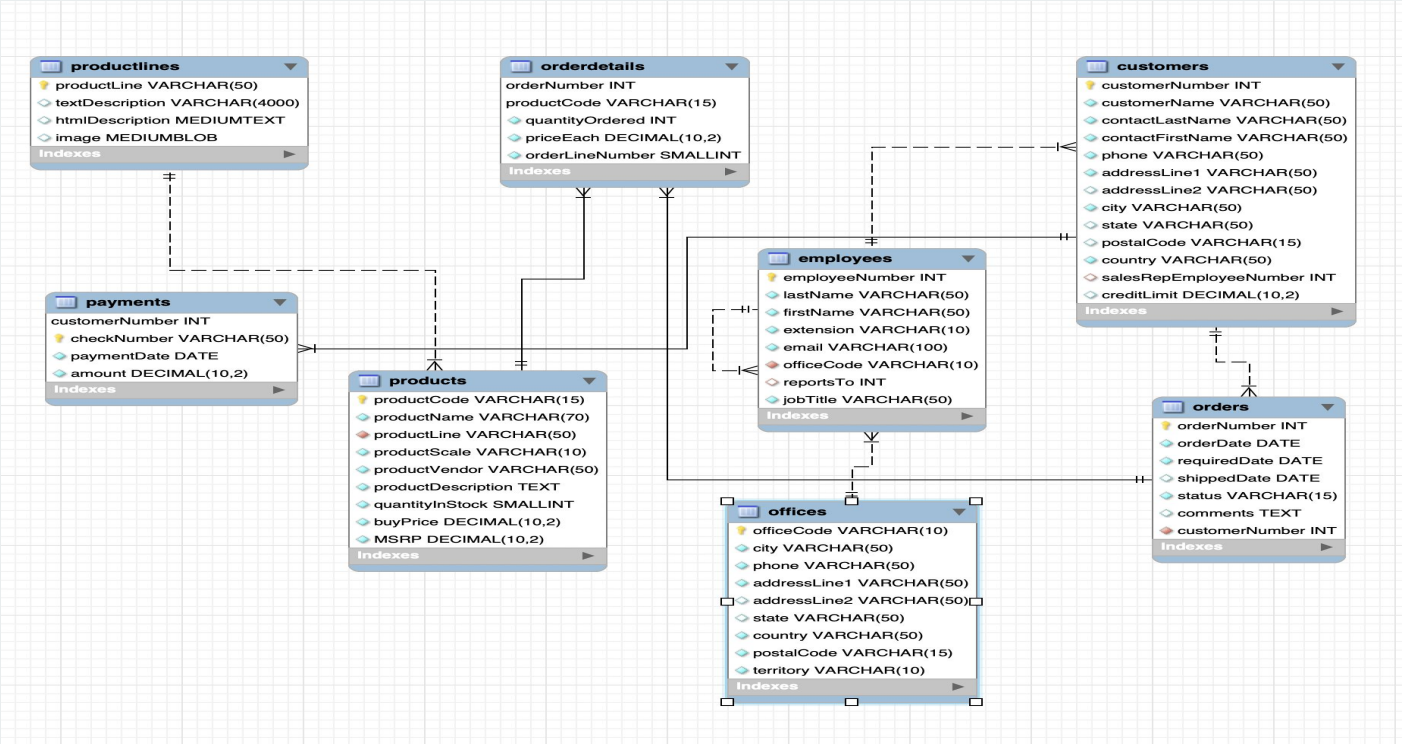
Topic: Use a sample database with preloaded entities



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Topic: Consider a use case that will allow us to write a query with multiple entities joined

Use case: Using the above schema**,** let's write a query that would produce the customer name, product name, order number, order date, and quantity ordered.

Query:

```
SELECT
  c.customerName AS "Customer Name",
   p.productName AS "Product Name",
   o.orderNumber AS "Order Number",
   o.orderDate AS "Order Date",
   od.quantityOrdered AS "Quantity Ordered"
FROM
   products p, orderdetails od, orders o, customers c
WHERE od.productCode = p.productCode
AND od.orderNumber = o.orderNumber
AND c.customerNumber = o.customerNumber;
```

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Topic: Go through the EXPLAIN plan

The EXPLAIN statement provides information about how MySQL executes statements:

- EXPLAIN works with SELECT, DELETE, INSERT, REPLACE, and UPDATE statements. (Only SELECT will be discussed)
- When EXPLAIN is used with an explainable statement, MySQL displays information from the optimizer about the statement execution plan. That is, MySQL explains how it would process the statement, including information about how tables are joined and in which order.
- EXPLAIN is useful for examining queries involving partitioned tables. (Not covered in this tutorial)
- The FORMAT option can be used to select the output format. TRADITIONAL presents the output in tabular format. This is the default if no FORMAT option is present. JSON format displays the information in JSON format

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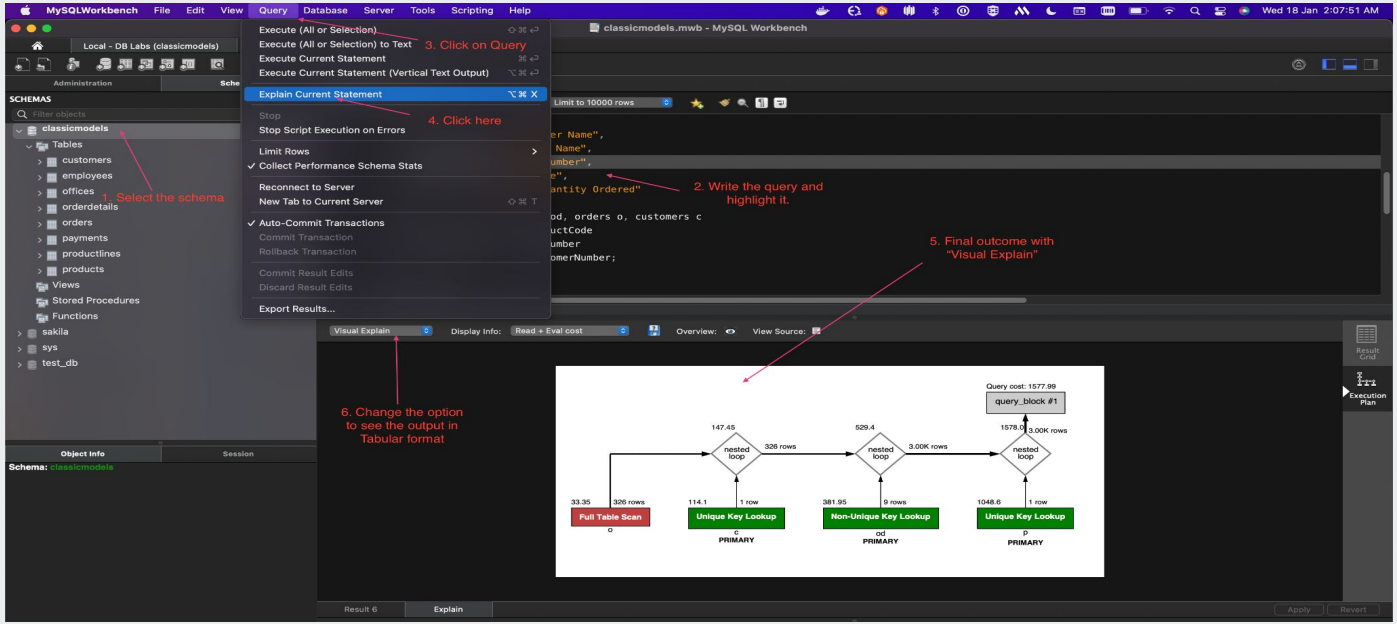
Topic: Multiple ways of EXPLAIN plan execution.

Well, there are a few ways using which we can execute EXPLAIN of a query:

- Using MySQL Workbench:



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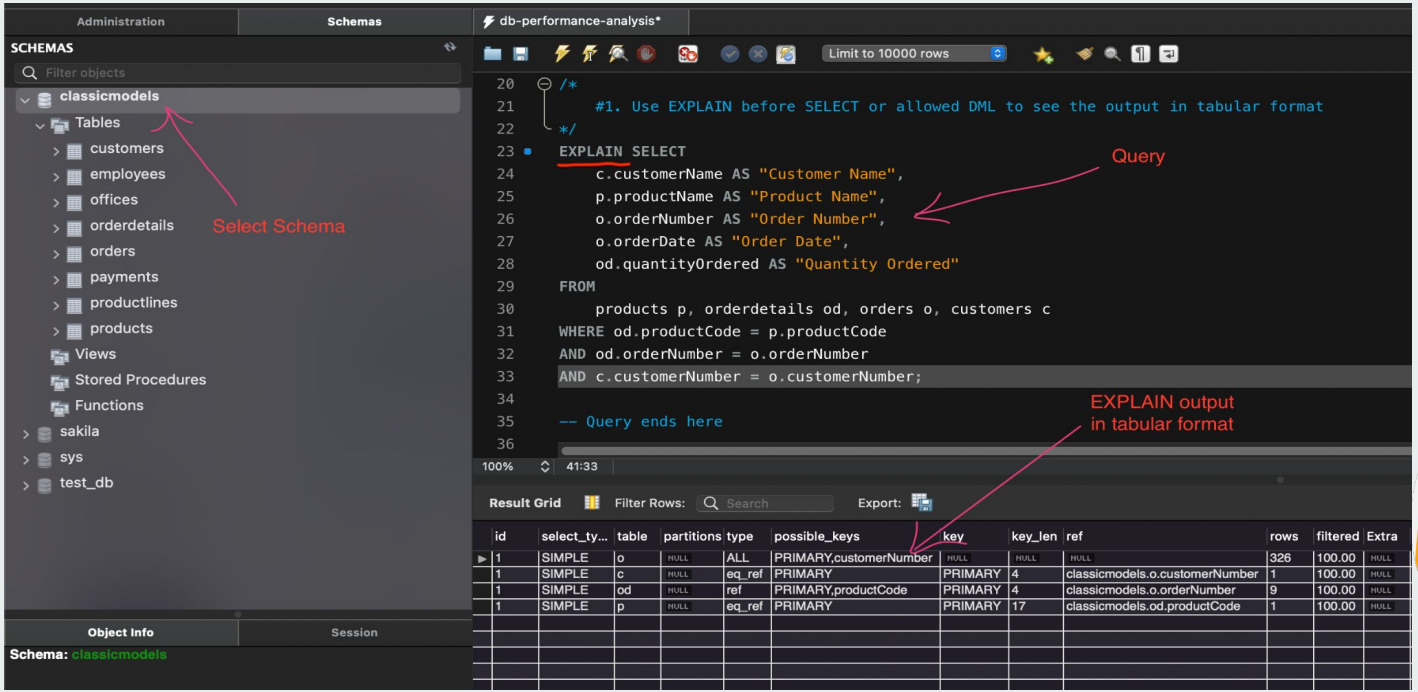
Topic: Multiple ways of EXPLAIN plan execution.

- Using default command: *EXPLAIN <SELECT statement>*



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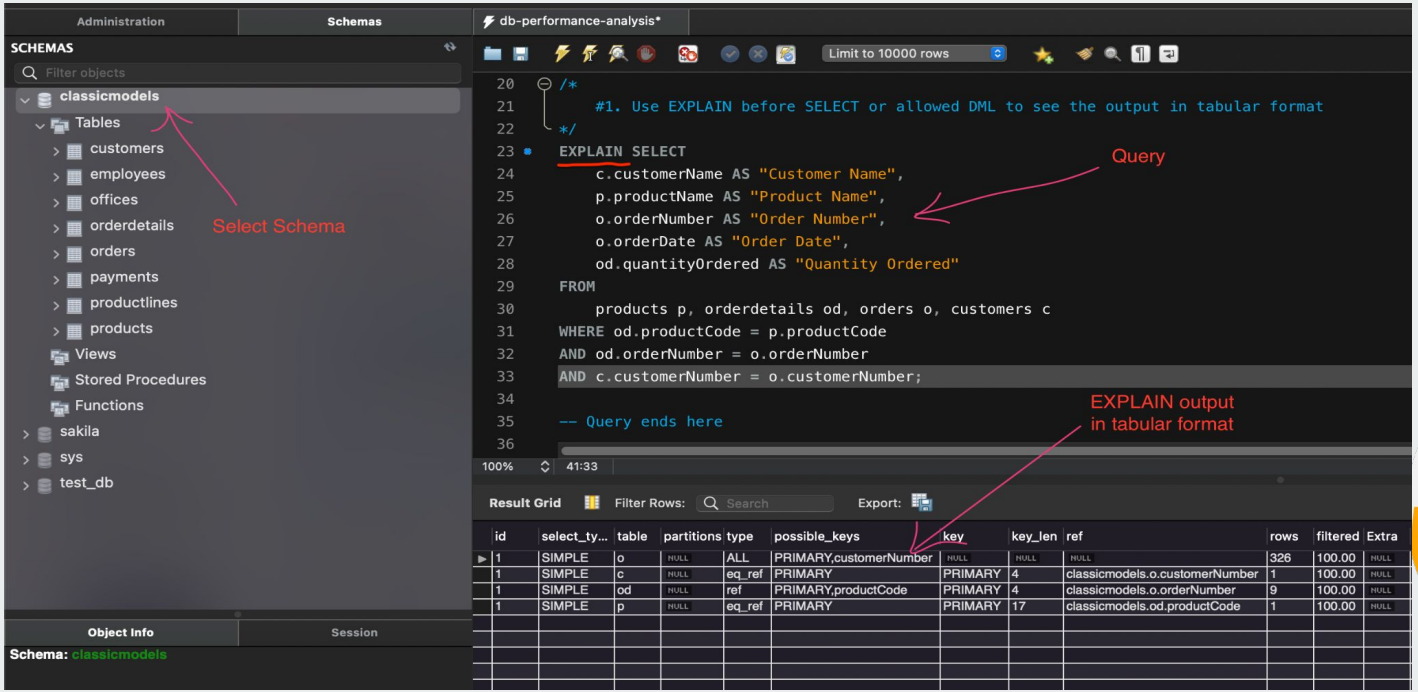
Topic: Multiple ways of EXPLAIN plan execution.

- Using default command: *EXPLAIN <SELECT statement>*



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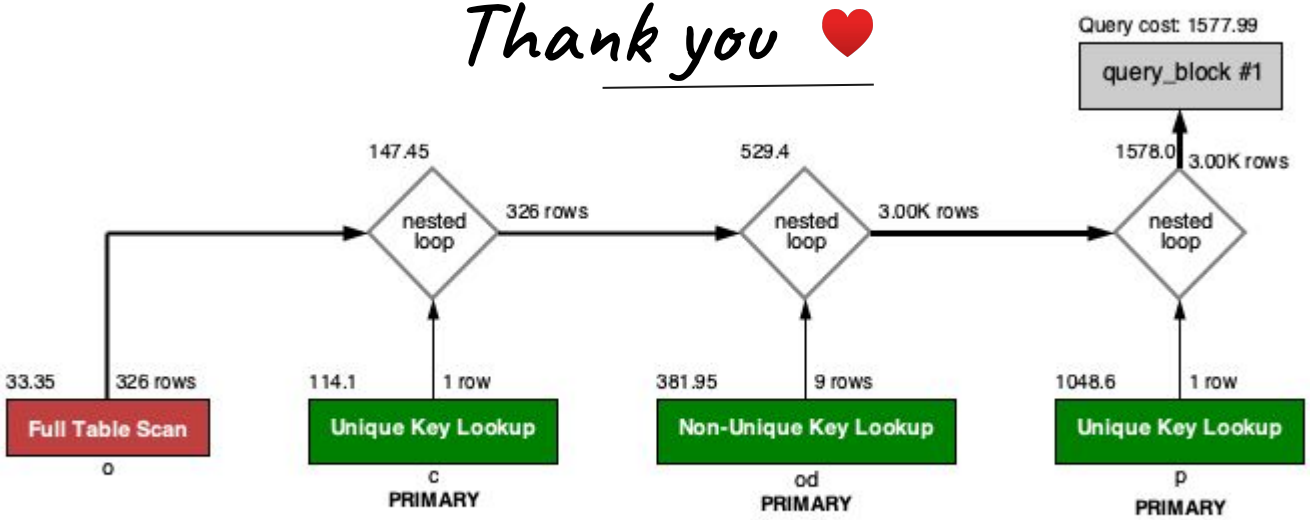
Topic: Understanding each component of EXPLAIN plan output.

There are various terminologies/types/columns that are important to know while analyzing the EXPLAIN output.

The most commonly used ones that I find useful are mentioned below:

- key
- key_len
- ref
- eq_ref
- NLJ (Nested-loop Join) algorithm

Thank you ❤



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