**Report**

**Subject:** Plan of Execution of Queries.

**Students:** CHARFAOUI Younes, BOURBAI Ismail.

**Github Repository:** [**https://github.com/IsmailBourbie/master-one-practical-work/tree/master/db\_dm/TP4**](https://github.com/IsmailBourbie/master-one-practical-work/tree/master/db_dm/TP4)

**Step One:**

We’ve installed *MySQL* in our computers, and we’ve used Command line and Text editorfor manipulating and queries the DBMS

**Step Two:**

In this step we create a table with large data. Let’s Execute the Following Line of SQL Script, the other queries are in the GitHub repos.

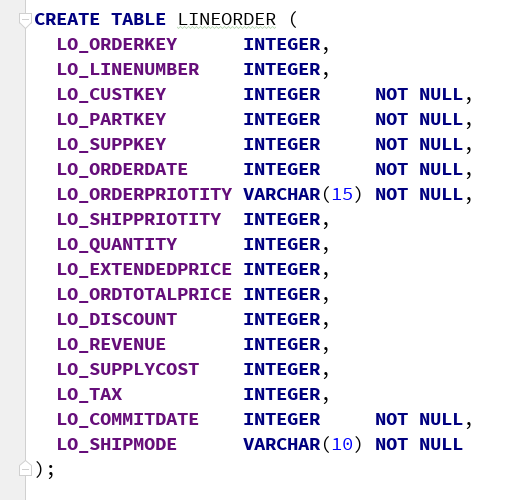


Figure Example of Create Query

**Step Three:**

In This Step we have used the SQL\*Loader to load our prepared data into the tables, the following screen shot demonstrate one of the tables that:

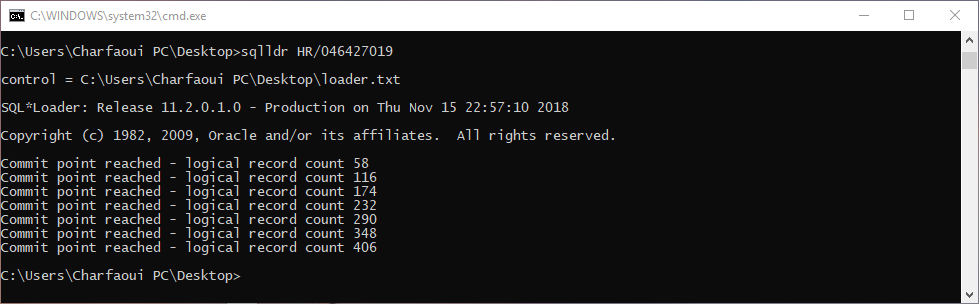


Figure SQL Loader Demonstration

In The Loader file we specifty the tale and from which file we are takiing the data, here is an model:

**LOAD DATA** INFILE “path\_of\_datafile" **INTO TABLE “**name\_of\_table” **FIELDS TERMINATED BY** separator(columns)

The other file are in the repo: <https://github.com/IsmailBourbie/master-one-practical-work/tree/master/db_dm/PW03/loader_files>

**Step Four:**

For a DBA there is very handy tool called Explain Plan, and this one help the DBA for tracking how the query is executed to help it debug and find an optimal way to reduce the time and make accurate result, in this Practical Work we explored different queries and its plan, Here is the Query and the corresponding plan:

**EXPLAIN PLAN FOR SELECT** \* **FROM** DATES;

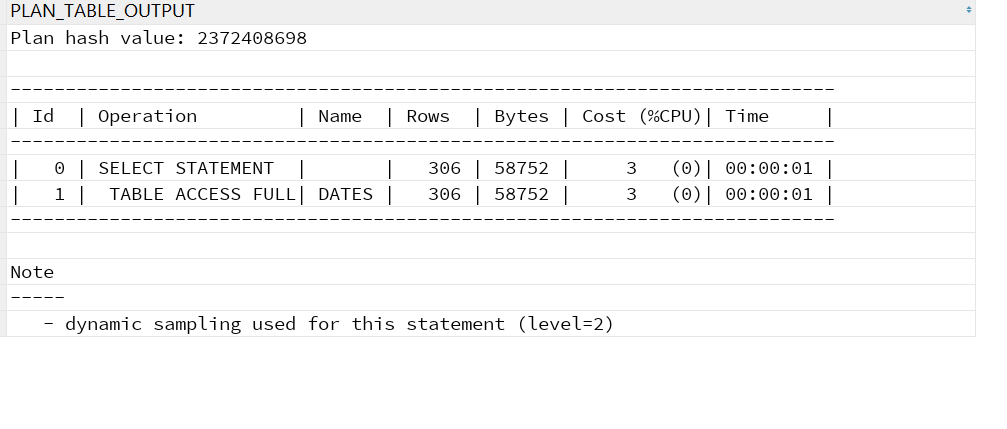


Figure Result Plan

We made another test with a complex query, here is both of them:

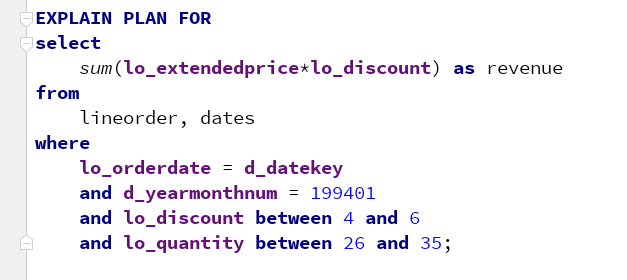


Figure Complex query for The EXPLAIN PLAN

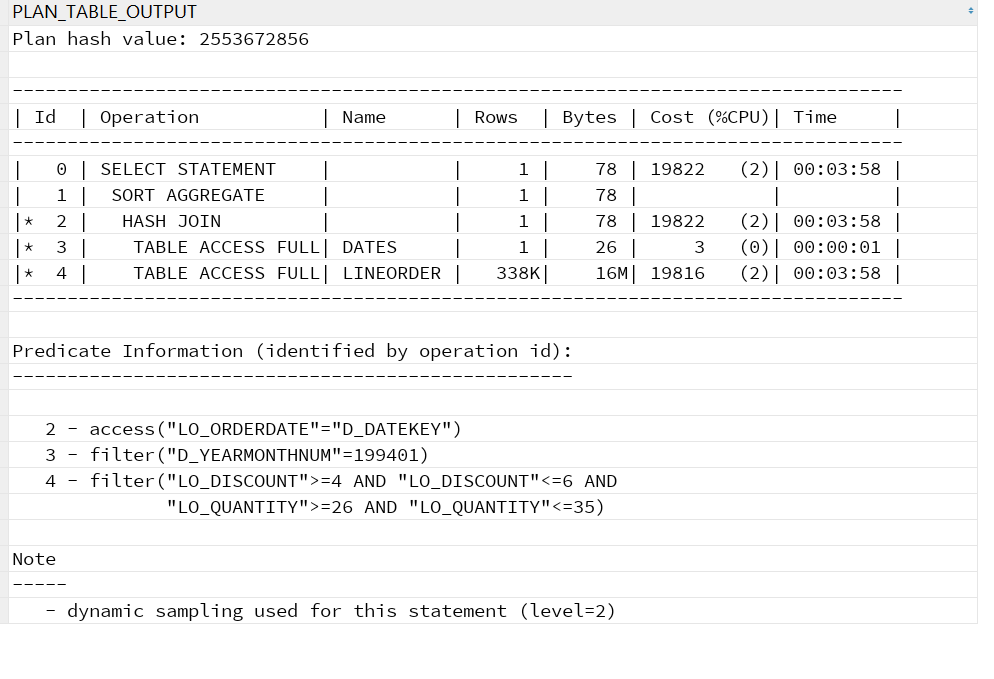


Figure Plan of Execution of Last Query

The Other Examples are in the repository[. https://github.com/IsmailBourbie/master-one-practical-work/tree/master/db\_dm/PW03/screen\_shots](file:///C:\Users\Ismail%20Bourbie\Downloads\.%20%20https:\github.com\IsmailBourbie\master-one-practical-work\tree\master\db_dm\PW03\screen_shots)

**Step Five:**

At this point we know how to see the way the query is executing, but how tune some parameter? The way to do that is throughout using hints, hints are a way for telling the DBMS how to execute queries, we ‘have used The Nested Loop Hint instead of the default Hash Join to Show the difference, here is the query and the associated plan.

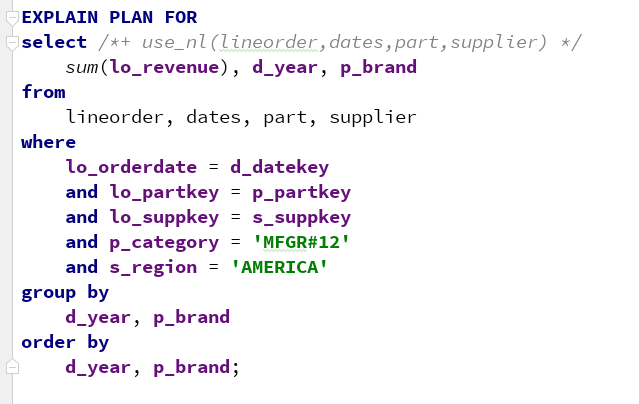


Figure Query Use A Hint to optimize

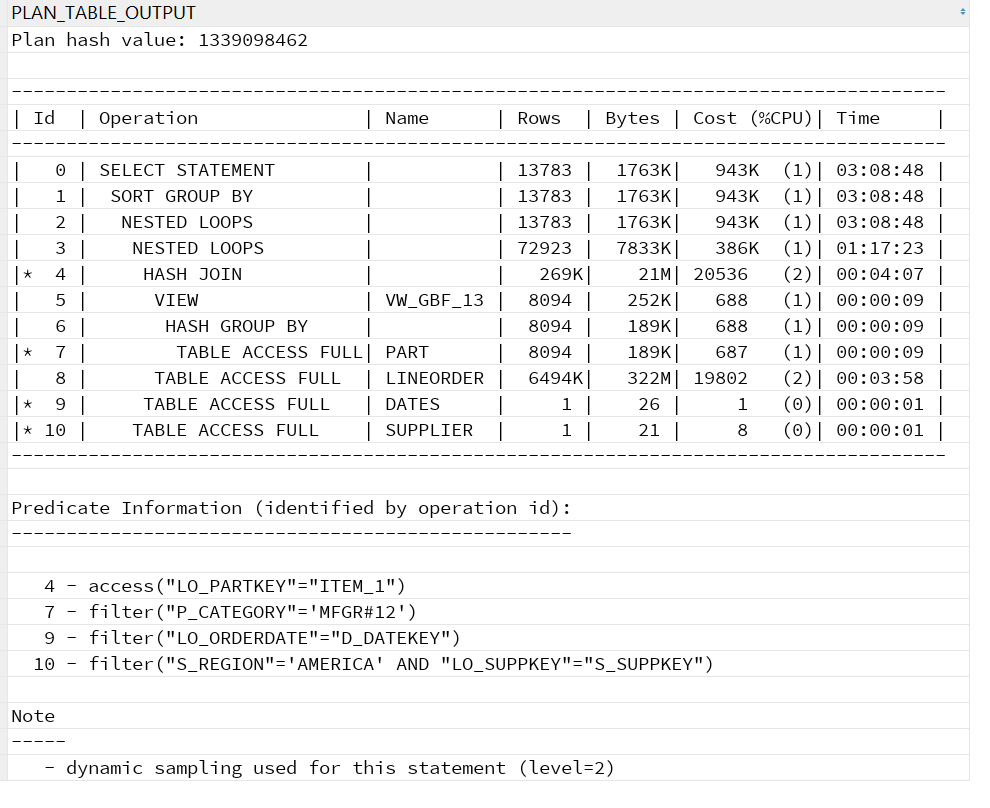


Figure the Plan of Nested Loop Example

In The Operation with id 3 and 2, we see that the DBMS has used Nested Loop in The Plan of executing the query and this demonstrate how we use hints.

**Step Six:**

In This last step, our goal is to use an optimization technique to make the query work faster as possible for this we used the indexes and horizontal fragmentation, the queries are in the repository and one of the testing query and it’s correspond plan are below :

Other Queries: <https://github.com/IsmailBourbie/master-one-practical-work/blob/master/db_dm/PW03/queries.sql>

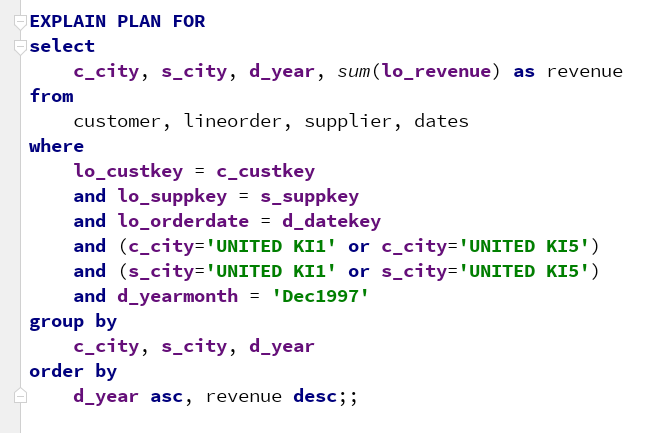


Figure Query to demonstrate Index Optimization

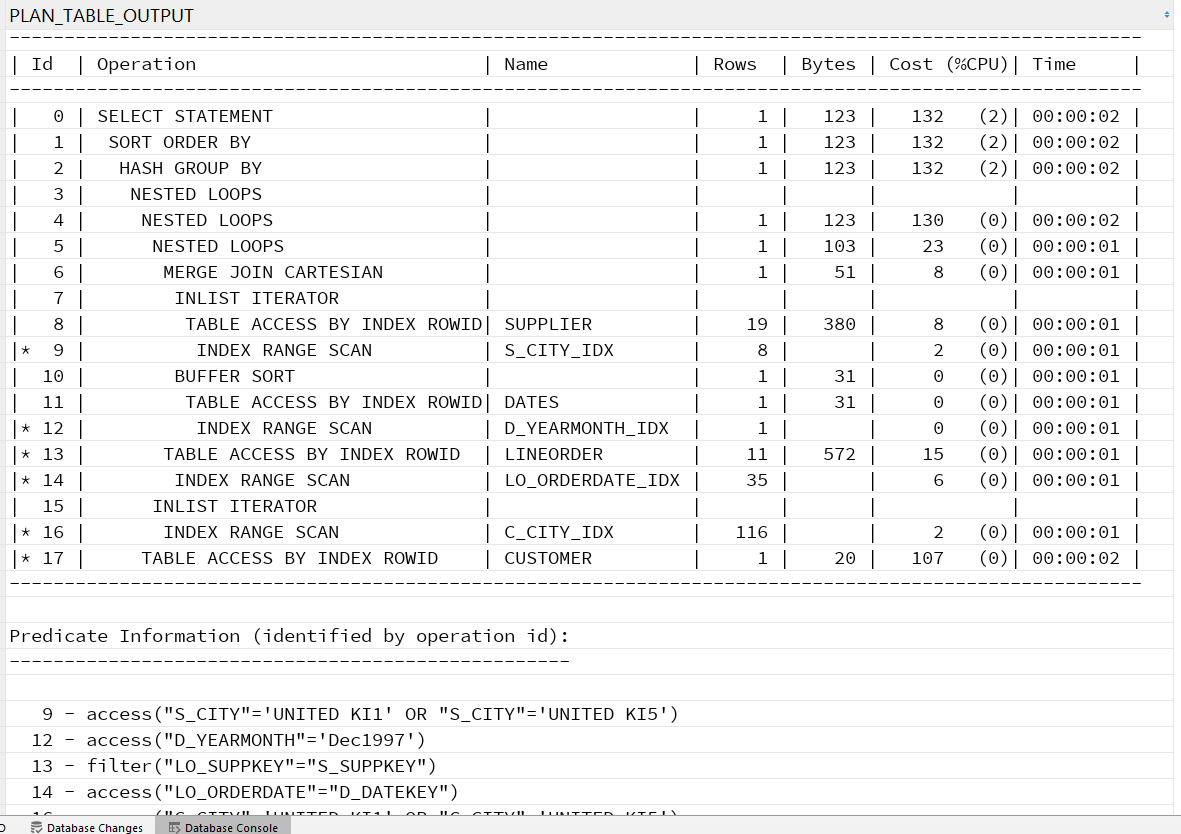


Figure Plan after Index Modification

**Conclusion:**

In This Practical word we saw that oracle DBMS is a great one , its offer loading data from various input , help with monitoring the query plan execution and also give the database administrator the tools and ways to optimize the database structure and the corresponding query via multiple parameters, another future which is a great about it but really made us crazy about oracle is the security provided , really in the first time your hand will be very dirty just to enter into the DBMS and start making some queries, really it was very difficult to just enter into it, lastly I would really recommend this DBMS for A very large enterprise that need security and performance.