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# **Query Proccessing System**

- 1) Query Tokenization
- 2) Query Processing
- 3) Query Optimization
- 4) Query Execution

## **Query Processing System:**

When we submit an SQL Query to the Database then Database Engine will Perform the following Steps.

#### Step1:

## **Query Tokenization:**

This Phase will take SQL Query as an Input, divided into no. of tokens and Generate Stream of tokens as an output.

#### Step2:

## **Query Processing:**

This phase will take Stream of tokens as an Input, constructs Query Tree with the Tokens, if Query Tree Success then no Syntax error is available in the provided SQL Query. If Query Tree is not Success then there are some syntax errors in the provided SQL Query.



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#### Step3:

## **Query Optimization:**

The main purpose of Query Optimization phase is to perform optimization on Query Tree in order to reduce execution time and to optimize memory utilization.



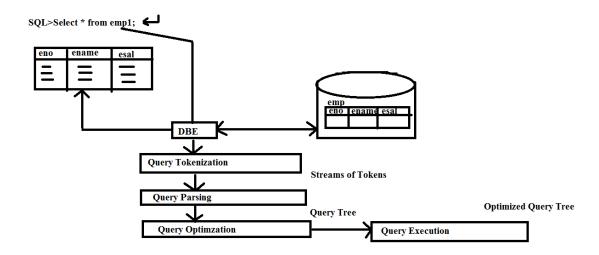


Step4:

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## **Query Execution:**

This phase will take optimized Query Tree as an input and execute the Query by using interpreters.



# JDBC(Java DataBase Connectivity):

- -->The process of interacting with the database from Java Applications is called as JDBC.
- -->JDBC is an API, which will provide very good predefined library to connect with database from JAVAApplications in order to perform the basic database operations:
- -->In case of JDBC Applications we will define the database logic and Java application and we will send a Java represented database logic to Database Engine.But database engine is unable to execute the Java represented database logic,it should required the database logic in Query Language Representations.
- -->In the above context, to execute JDBC applications we should require a conversion mechanism to convert the database logic from Java representations to Query language representations and from Query language representations to Java representations.
- -->In the above situation the required conversion mechanisms are available in the form of a software called as "Driver".

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