DEPARTMENT OF COMPUTER APPLICATION

MCA 'A'2024
SEMESTER - II

Database Design and Implementation- E1CAB612

Class Project

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Signature of the Faculty

TITLE: WORKING WITH A NOSQL DATABASE

ORIENTDB

What is NoSQL database?

A **NoSQL database** is a type of database that provides a mechanism for storing and retrieving data that is different from traditional **relational databases (SQL databases)**.

What is ORIENTDB?? Why choose Orientdb??

OrientDB is a **multi-model NoSQL database** that combines the power of graphs with the flexibility of documents. It allows you to store data as **documents, graphs, objects, or key-values**, all in one database engine. This makes it quite unique compared to other databases that usually stick to one model.

Here are some key reasons you might choose OrientDB:

1. Multi-Model Support

Store and query **graph**, **document**, **object**, and **key-value** data using one engine.

Avoid the complexity of using multiple databases for different types of data.

2. SQL-Like Query Language

Familiar SQL syntax with extensions for graph traversal.

Easier for teams coming from relational DBs.

3. Graph + Document Hybrid

Powerful for use cases like **social networks**, **recommendation engines**, or **network topologies**.

You get the performance and modeling benefits of graphs, plus the flexibility of documents

.

4. High Performance and Scalability

Supports horizontal scaling (sharding + replication)

Optimized for fast reads/writes and graph traversals.

5. Schema-less, Schema-full, or Mixed

Flexibility to define schema if needed—or go schema-less.

Great for rapidly evolving applications.

6. ACID Transactions

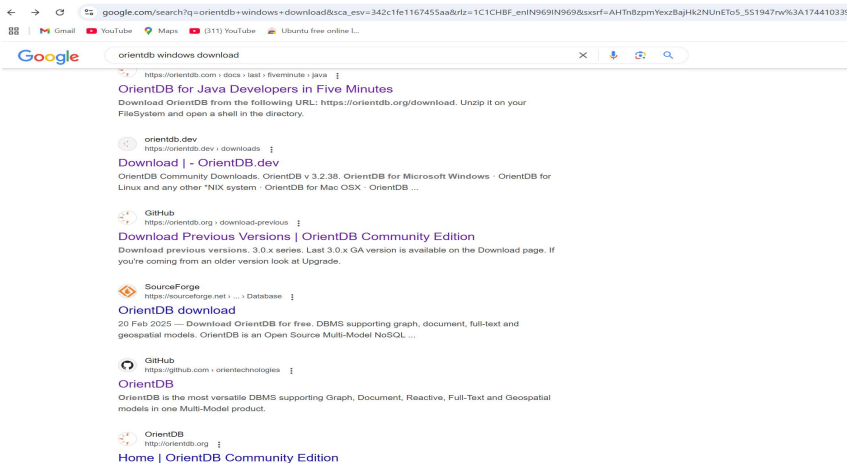
Unlike many NoSQL databases, OrientDB supports full ACID transactions.

7. Embedded and Standalone

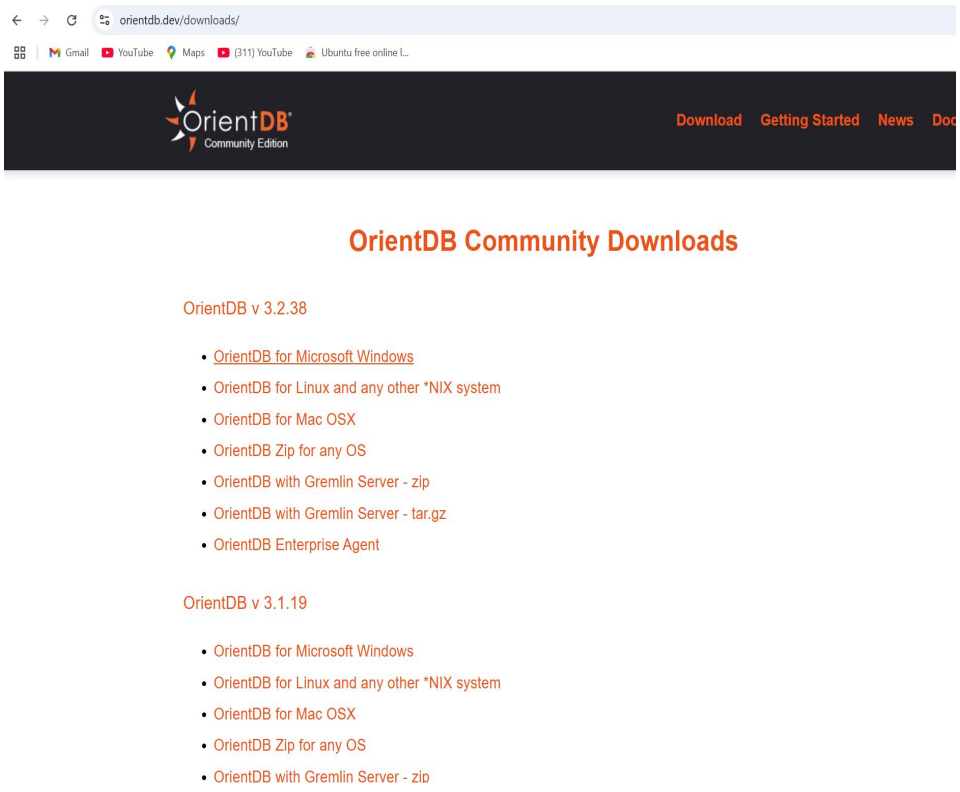
Can run embedded in Java apps or as a standalone DB server.

INSTALLATION OF ORIENTDB:

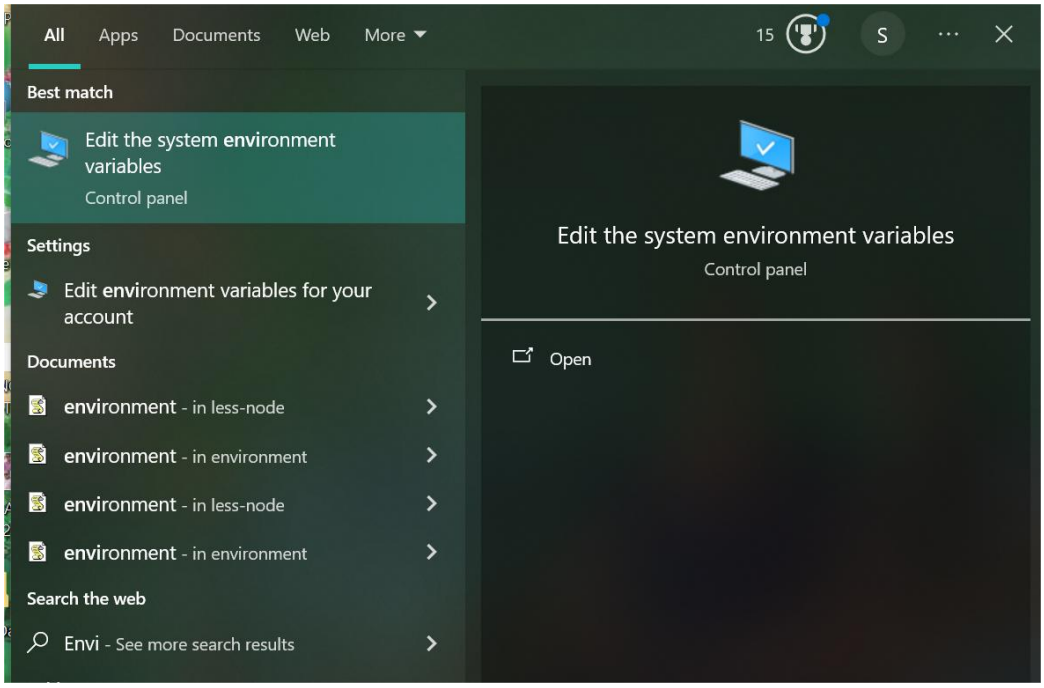
Step1: Open Crome and search orient database download then click on mentioned link.



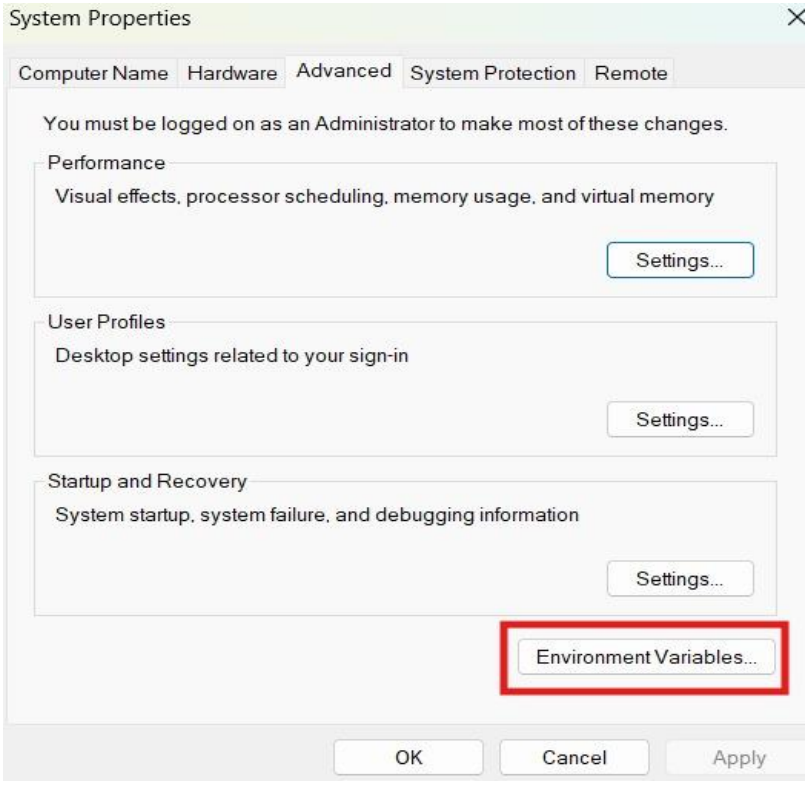
Step2: after clicking that we will get one more screen there click download option as we shown here.



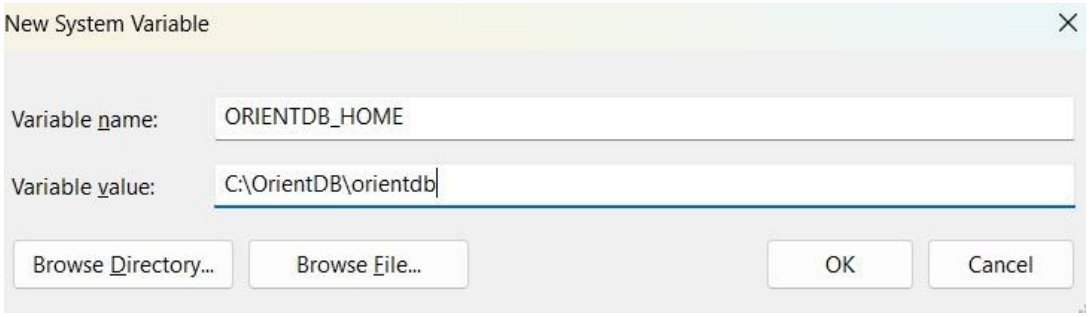
Step3: go to windows and search for environmental variables then click on that,



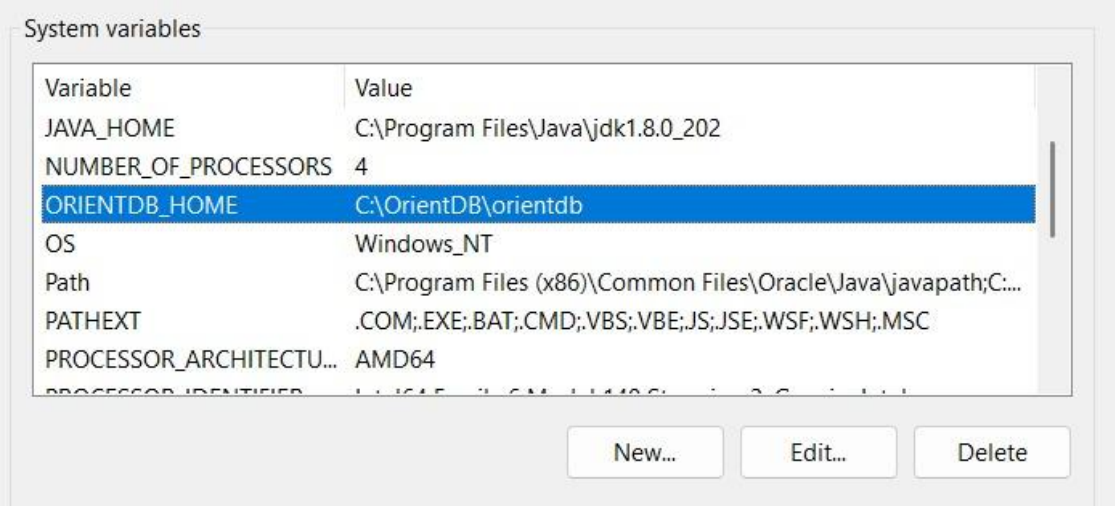
Step4: in that windows search for environmental variables then click on that.



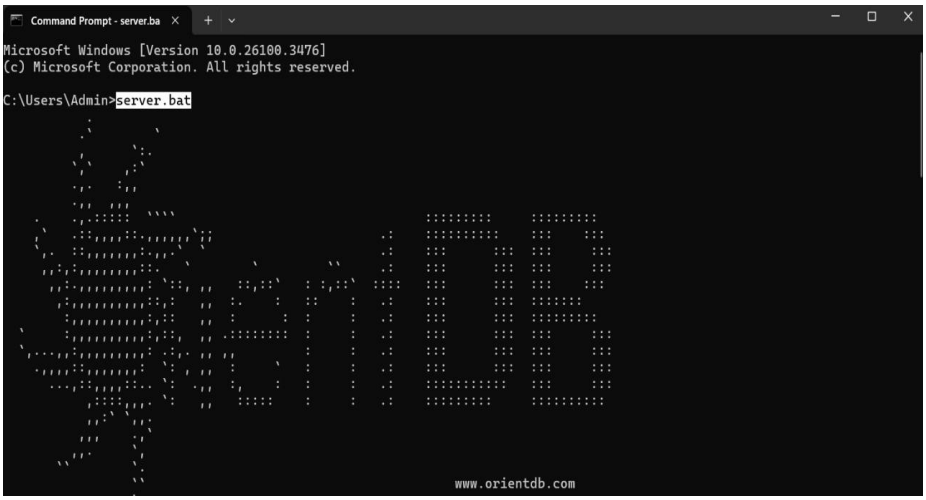
Step5: in that windows create new variables name and variables value and then click on okk.



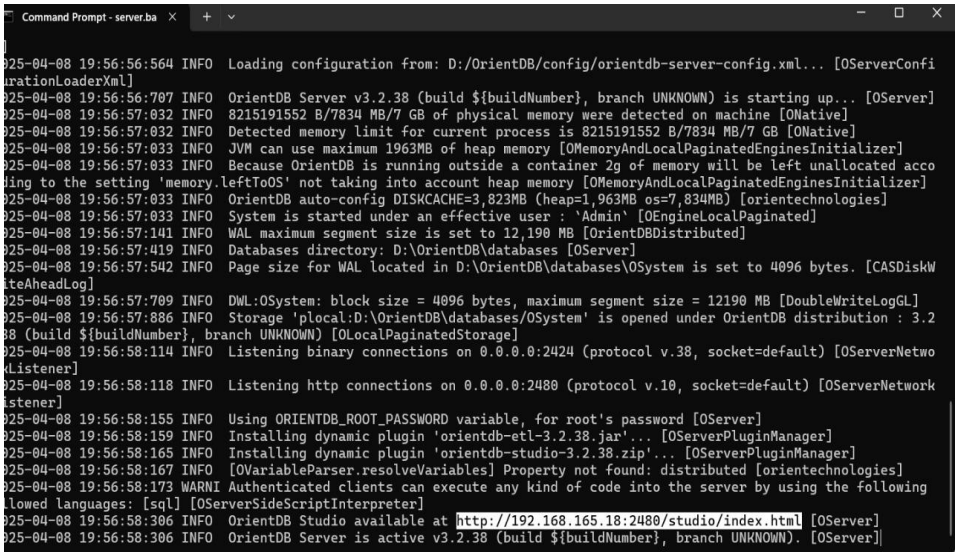
Step6: in the system variable create the path.



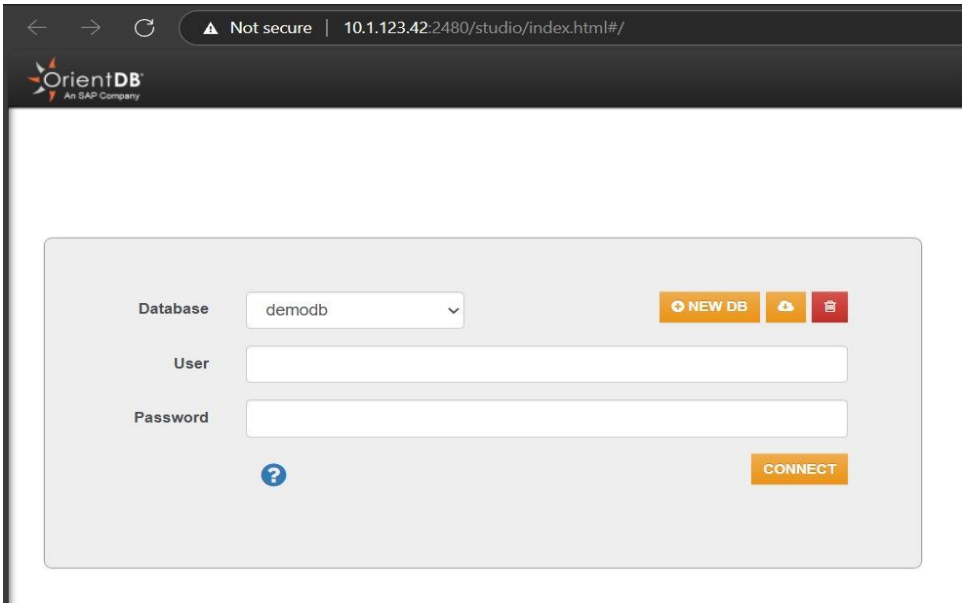
Step7: open command prompt type server.bat.



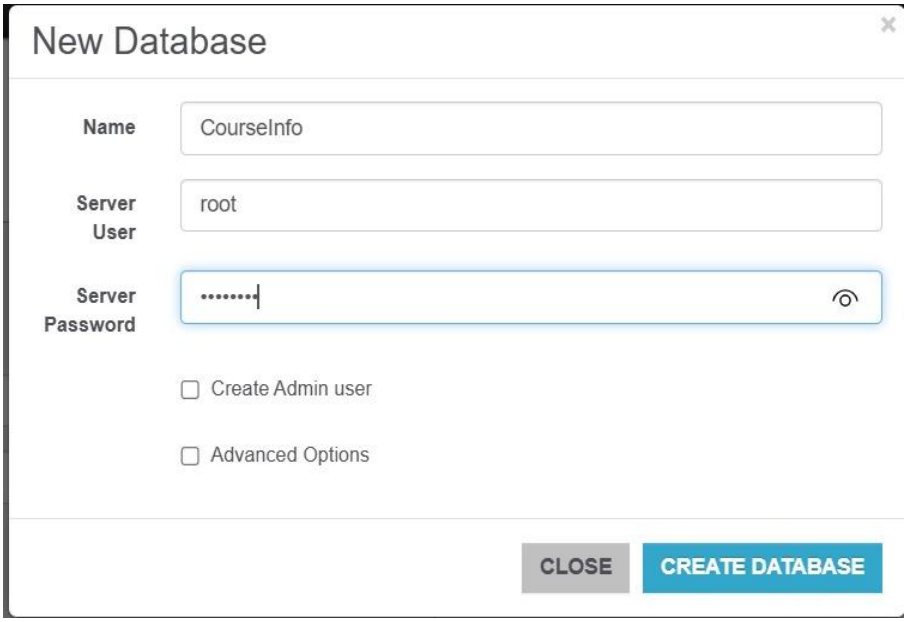
Step8: Then click on below highlited link.



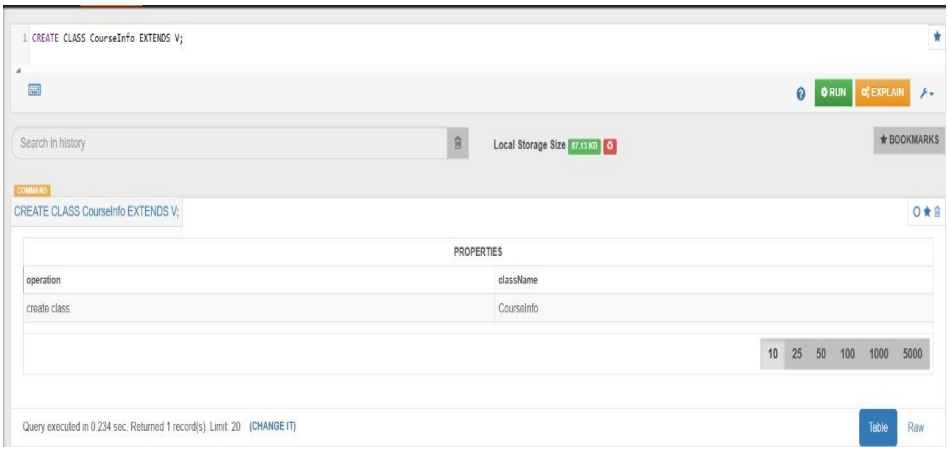
Step9: Creating a databse.



Step10: Clicking newDb option will come to create new database.



Step11: to create class.



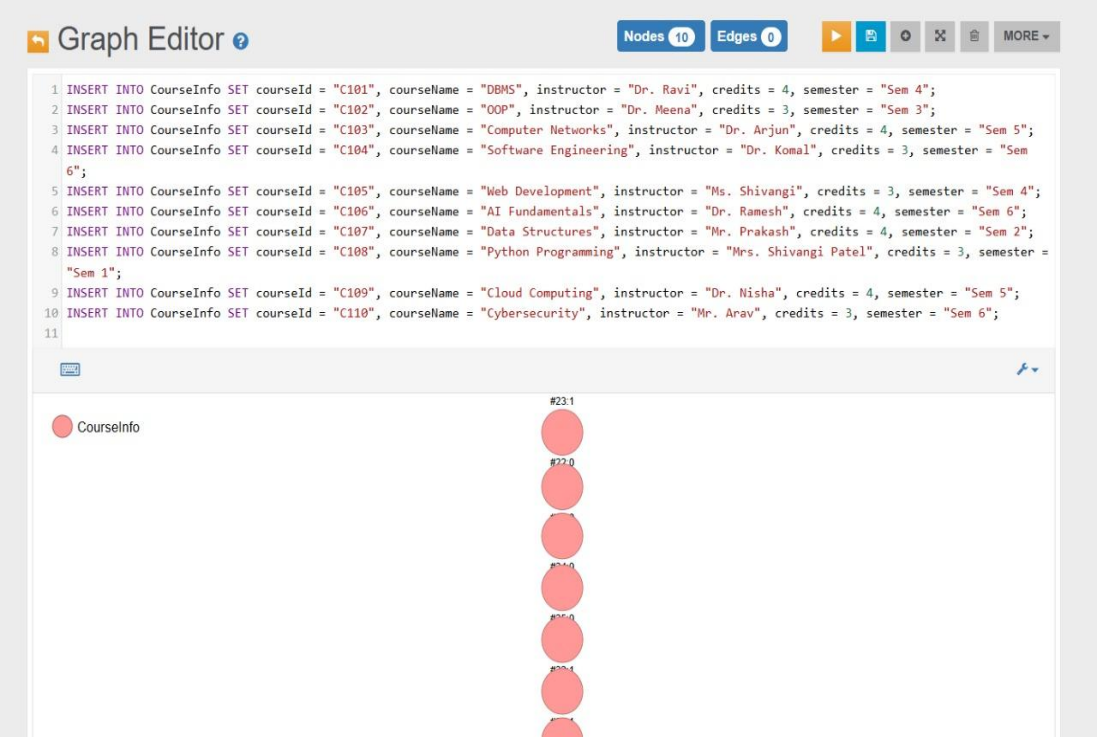
Step12: Creating Property Command.

CREATE PROPERTY CourseInfo.courseId STRING;
CREATE PROPERTY CourseInfo.courseName STRING;
CREATE PROPERTY CourseInfo.instructor STRING;
CREATE PROPERTY CourseInfo.credits INTEGER;
CREATE PROPERTY CourseInfo.semester STRING;

Step13:Inserted data into class .

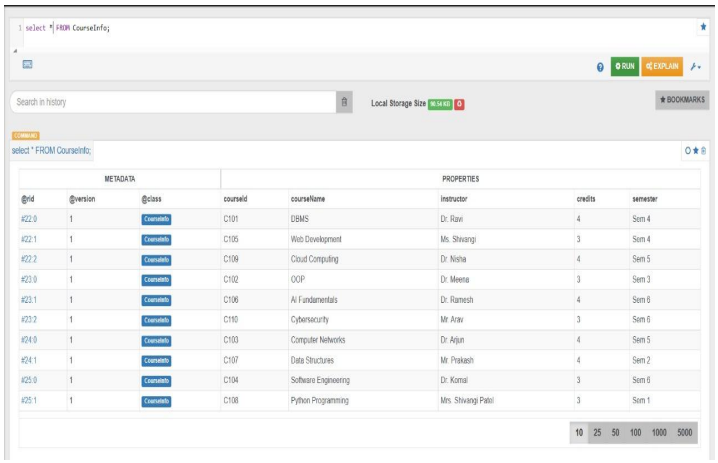
INSERT INTO CourseInfo SET courseId = "C101", courseName = "DBMS", instructor = "Dr. Ravi", credits = 4, semester = "Sem 4";
INSERT INTO CourseInfo SET courseId = "C102", courseName = "OOP", instructor = "Dr. Meena", credits = 3, semester = "Sem 3";
INSERT INTO CourseInfo SET courseId = "C103", courseName = "Computer Networks", instructor = "Dr. Arjun", credits = 4, semester = "Sem 5";
INSERT INTO CourseInfo SET courseId = "C104", courseName = "Software Engineering", instructor = "Dr. Komal", credits = 3, semester = "Sem 6";
INSERT INTO CourseInfo SET courseId = "C105", courseName = "Web Development", instructor = "Ms. Shivangi", credits = 3, semester = "Sem 4";
INSERT INTO CourseInfo SET courseId = "C106", courseName = "AI Fundamentals", instructor = "Dr. Ramesh", credits = 4, semester = "Sem 6";
INSERT INTO CourseInfo SET courseId = "C107", courseName = "Data Structures", instructor = "Mr. Prakash", credits = 4, semester = "Sem 2";
INSERT INTO CourseInfo SET courseId = "C108", courseName = "Python Programming", instructor = "Mrs. Shivangi Patel", credits = 3, semester = "Sem 1";
INSERT INTO CourseInfo SET courseId = "C109", courseName = "Cloud Computing", instructor = "Dr. Nisha", credits = 4, semester = "Sem 5";

INSERT INTO CourseInfo SET courseId = "C110", courseName = "Cybersecurity", instructor = "Mr. Arav", credits = 3, semester = "Sem 6";



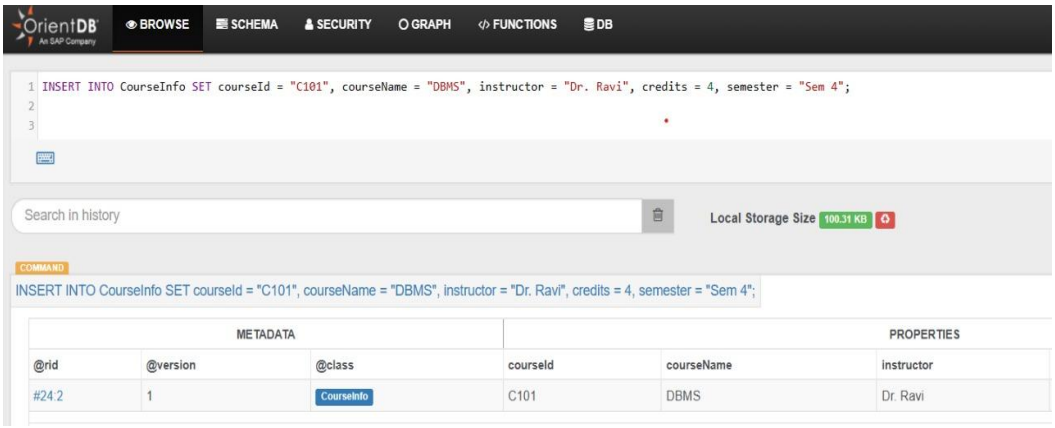
Select *FROM CourseInfo;

Output:



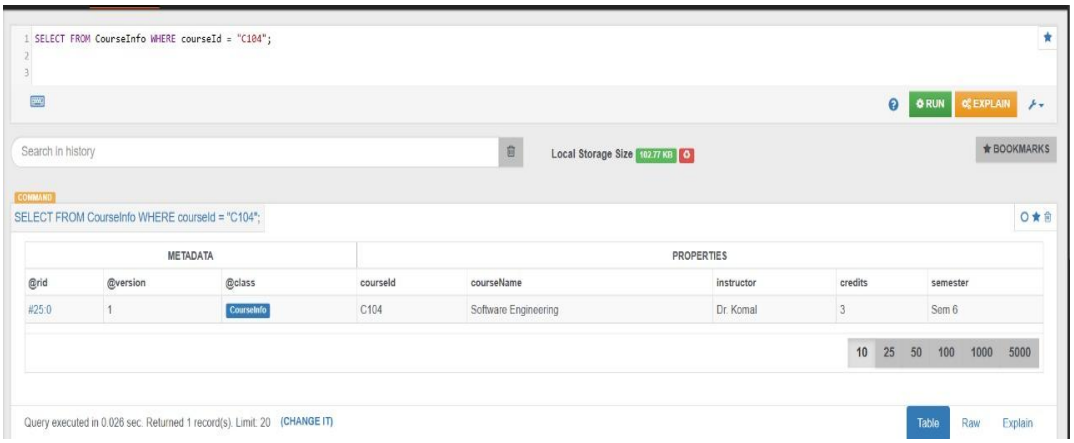
Step14:Inserted Insertion Query:

INSERT INTO CourseInfo SET courseId = "C101", courseName = "DBMS", instructor = "Dr. Ravi", credits = 4, semester = "Sem 4";



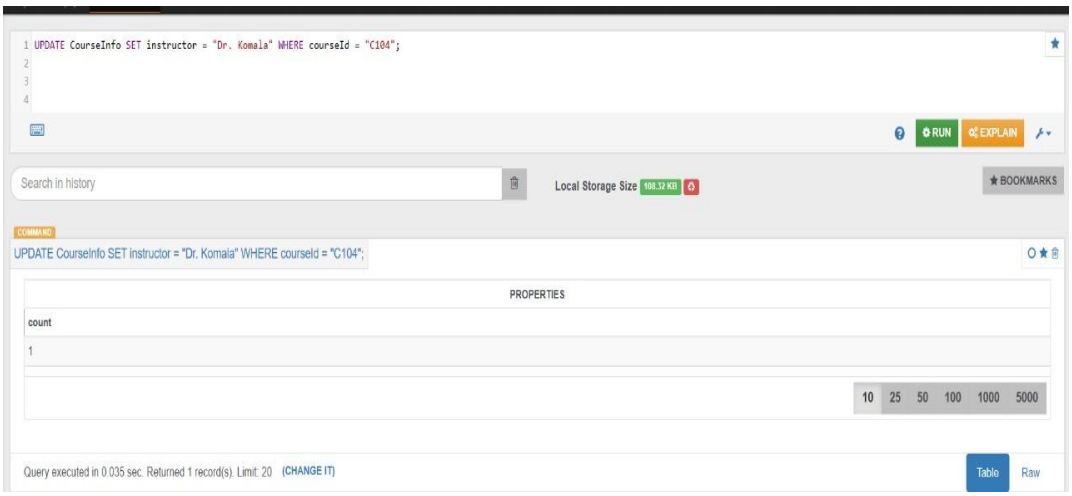
Step15: Inserted Selection Query.

SELECT FROM CourseInfo WHERE courseId ="C104";



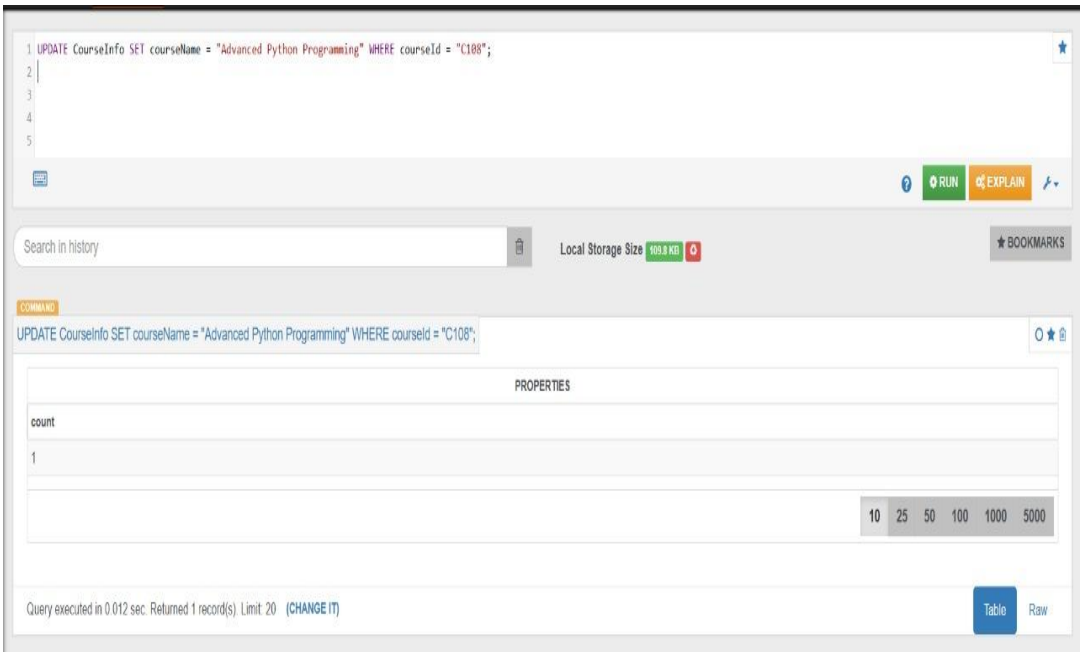
Step16: Inserted Update Query1.

UPDATE CourseInfo SET instructor = "Dr.Komala" WHERE courseID = "C104";



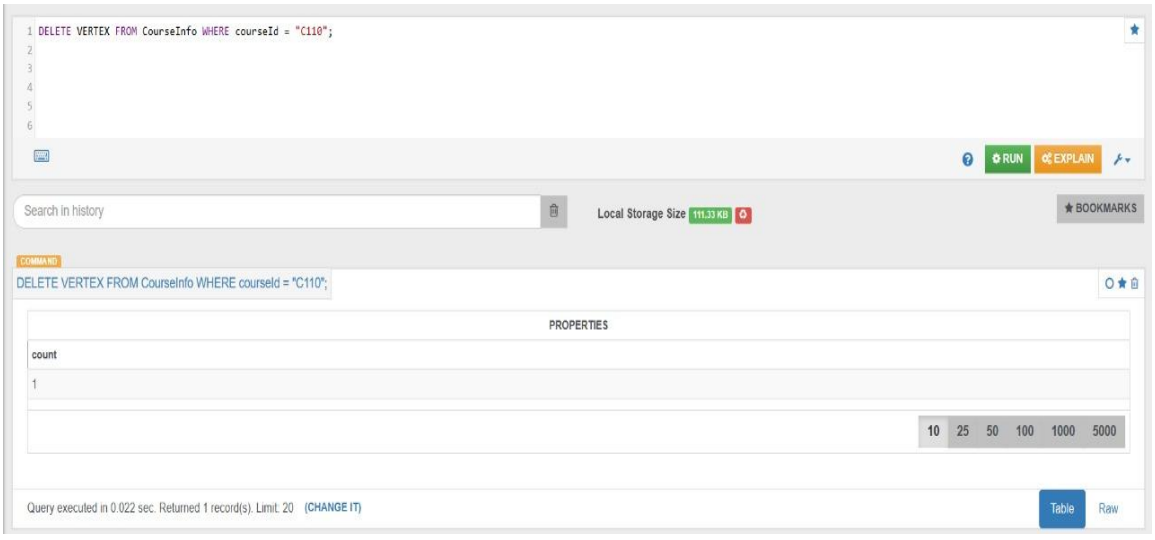
Step17: Inserted Update Query2.

UPDATE CourseInfo SET courseName = "Advanced Python Programming" WHERE courseID = "C108";



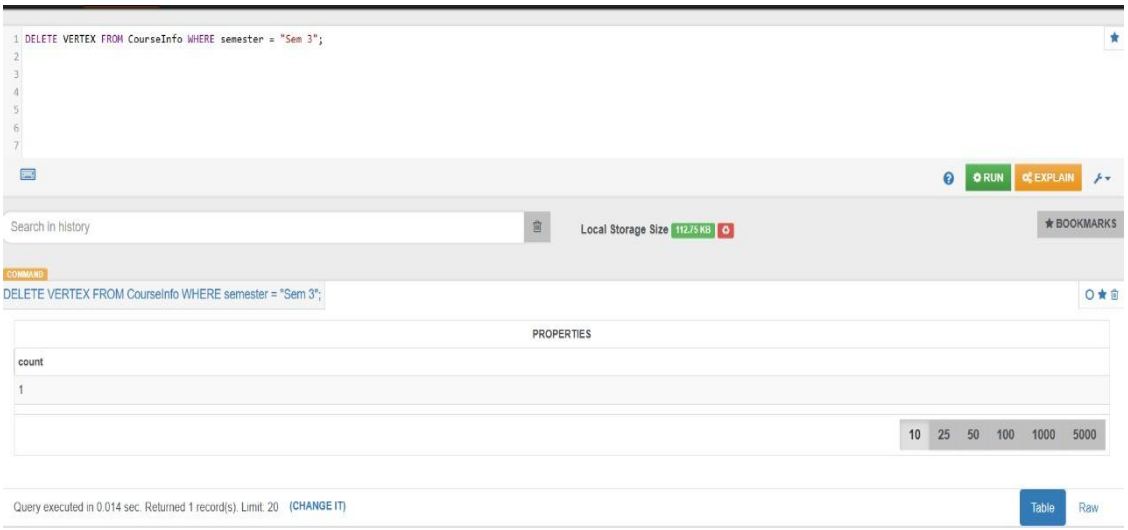
Step18: Inserted Delete Query1.

DELETE VERTEX FROM CourseInfo WHERE courseID = "C110";



Step19: Inserted Delete Query2.

DELETE VERTEX FROM CourseInfo WHERE Semester = "Sem 3";



Step20: Inserted Delete Query3.

DELETE VERTEX FROM CourseInfo;