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Laboratory 5a

Title of the Laboratory Exercise: Java database programming

1. Introduction and Purpose of Experiment

   The SQL includes commands to define view on the data. A view contains rows and columns, just like a real table. Java uses JDBC (Java Database Connectivity) to connect to databases. JDBC allows to connect to a wide-range of databases such as Oracle, MySQL, etc. By doing this lab, students will be able to implement views in SQL and connect the developed database with the application.

2. Aim and Objectives

   Aim

   - To design and implement views on the data using SQL commands
   - To connect to the relational database in Java

   Objectives

   At the end of this lab, the student will be able to

   - Design and execute views using SQL commands
   - Perform database programming in Java

3. Experimental Procedure

   i. Analyse the problem statement
   ii. Execute the built-in functions in SQL
   iii. Design and execute the view statements in SQL
   iv. Test the executed commands
   v. Document the Results
   vi. Analyse and discuss the outcomes of your experiment

4. Questions

   a. Create a table MANGER with attributes such as Name, Id, Department, Address, and Salary. Write SQL statements for the following expressions.

      i. Create a view ‘MANAGER_VIEW’ to display the details such as name and department of each manager
      ii. Display the name of the manager from MANAGER_VIEW whose department is ‘Information Technology’
      iii. Drop the views generated

5. Presentation of Results

Code

```
-- Question 5.1
-----------------------------------
create table manager_table(_ID int auto_increment, Name varchar(20),Department varchar(20),Address varchar(20),Salary VARCHAR(20),primary key (_ID));
desc manager_table;

insert into manager_table(name,Department,address,salary) values ("Srikanth","IT","Bangalore",100000);
insert into manager_table(name,Department,address,salary) values ("Naveen GN","IT","Bangalore",100000);
insert into manager_table(name,Department,address,salary) values ("Supraja P","IT","Bangalore",100000);
insert into manager_table(name,Department,address,salary) values ("Sushanth","CSE","Bangalore",100000);
select * from manager_table;

-- Question 5.2
-----------------------------------
create VIEW srikanth_manager_view as SELECT Name,Department from manager_table where Department = "IT" ;
select * from srikanth_manager_view;


-- Question 5.3
-----------------------------------
drop view srikanth_manager_view;
```

Figure 1 SQL Queries for given problem statement

Results

Question 1.1)

Field	Type	Null	Key	Default	Extra
Filter...	Filter...	Filter...	Filter...	Filter...	Filter...
_ID	int	NO	PRI	NULL	auto_increment
Name	varchar(20)	YES		NULL	
Department	varchar(20)	YES		NULL	
Address	varchar(20)	YES		NULL	
Salary	varchar(20)	YES		NULL	

Figure 2 Metadata for table "Manager table"

MySQL: 4 records on 'manager_table' table

_ID	Name	Department	Address	Salary
Filter...	Filter...	Filter...	Filter...	Filter...
1	Srikanth	IT	Bangalore	100000
2	Naveen GN	IT	Bangalore	100000
3	Supraja P	IT	Bangalore	100000
4	Sushanth	CSE	Bangalore	100000

Figure 3 Data displayed from table "Manager table"

Question 1.2)

Name	Department
abc Filter...	abc Filter...
Srikanth	IT
Naveen GN	IT
Supraja P	IT

Figure 4 View table for srikanth_view_manager

Question 1.3)

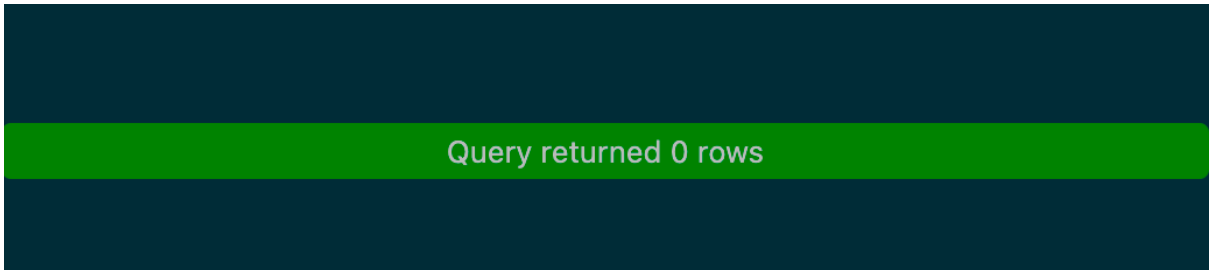

Figure 5 View table dropped

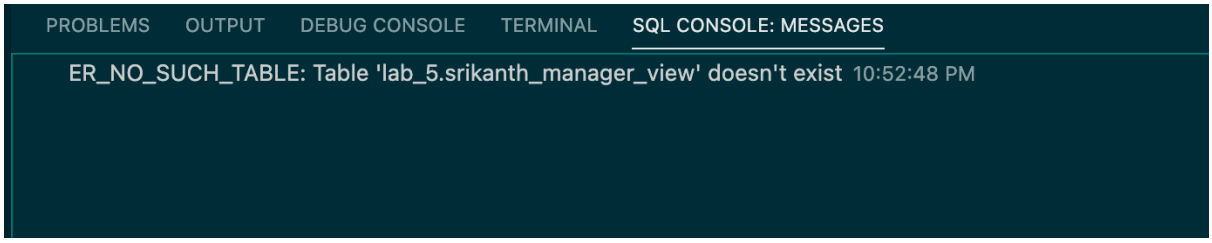

Figure 6 Verification that view table was dropped

6. Analysis and Discussions

A view in SQL is a virtual table based on the result-set of an SQL statement it contains rows and columns, just like a real table. The fields in a view are fields from one or more real tables in the database. A view can be created by selecting fields from one or more tables present in the database. A View can either have all the rows of a table or specific rows based on certain condition.

JDBC offers a programming-level interface that handles the mechanics of Java applications communicating with a database or RDBMS. The JDBC API supports communication between the Java application and the JDBC manager.

7. Conclusions

A data can be presented in the form of virtual table called views, they can be created, displayed and dropped just like any other table by making SQL queries. A view of table was created, displayed and dropped in Srikanth_view_manager. We can use JDBC driver to make SQL queries. JDBC provides an interface to make SQL queries in java program.

8. Comments

1. Limitations of Experiments

One of the limitations on views is that it's only creates the appearance of a table, not a real table, the query processor must translate queries against the view into queries against the underlying source tables.

2. Learning happened

To design and execute views using SQL commands