**\*\*\* EXPERIMENT NO 01 \*\*\***

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**Roll No :** 65 [5B]

**Date :** 08-August-2020

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**AIM :** To study the relation model and demonstrate basic SQL commands

in Oracle 11g.

**PROBLEM STATEMENT:**

Establish the TinyStores database and execute different SQL queries against it. The logical database schemata, the organisation of relations and their contents are as below-

**EMP** (EMP\_CODE, EMP\_FNAME, EMP\_LNAME, EMP\_DOB, STORE\_CODE)

**STORE** (STORE\_CODE, STORE\_NAME, YTD\_SALES, REGION\_CODE, EMP\_CODE)

**REGION** (REGION\_CODE, REGION\_DESC)

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**conn CS565/cs565;**

Connected

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Query 1 : Write SQL code that will create the** **TinyStores** **database.**

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**CREATE TABLE EMP(**

**EMP\_CODE NUMBER(2) NOT NULL,**

**EMP\_FNAME VARCHAR2(15) NOT NULL,**

**EMP\_LNAME VARCHAR2(15) NOT NULL,**

**EMP\_DOB DATE DEFAULT SYSDATE-(365\*16) NOT NULL,**

**STORE\_CODE NUMBER(2) NOT NULL,**

**SALARY NUMBER(5) CHECK (SALARY>10000) NOT NULL,**

**CONSTRAINT PK\_EMP PRIMARY KEY (EMP\_CODE)**

**);**

**CREATE TABLE STORE(**

**STORE\_CODE NUMBER(2) NOT NULL,**

**STORE\_NAME VARCHAR2(25) NOT NULL,**

**YTD\_SALES NUMBER(9,2) DEFAULT 0 NOT NULL,**

**REGION\_CODE NUMBER(1) NOT NULL,**

**EMP\_CODE NUMBER (2),**

**CONSTRAINT PK\_STORE PRIMARY KEY (STORE\_CODE),**

**CONSTRAINT FK\_STORE\_EMPCODE FOREIGN KEY (EMP\_CODE) REFERENCES EMP(EMP\_CODE)**

**);**

**CREATE TABLE REGION (**

**REGION\_CODE NUMBER(1) NOT NULL,**

**REGION\_DESC VARCHAR(10) CHECK (REGION\_DESC IN**

**('EAST','WEST','NORTH','SOUTH')),**

**CONSTRAINT PK\_REGION PRIMARY KEY (REGION\_CODE)**

**);**

Table created.

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**Query 4 : Write SQL code to print the date and time of the system.**

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**SELECT TO\_CHAR(**

**SYSDATE, 'DD-MM-YYYY HH24:MI:SS') "NOW"**

**FROM DUAL;**

NOW

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08-08-2020 02:01:05

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Query 5: List the first name, last name, gender, Pincode and email for all persons.**

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**SELECT \***

**FROM EMP**

**WHERE SALARY<=35000;**

EMP\_CODE EMP\_FNAME EMP\_LNAME EMP\_DOB STORE\_CODE SALARY

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14 MOHANA SETH 01-JUN-71 22 27000

15 SHASWAT PURI 23-NOV-59 11 25000

16 SIMON PARERA 03-SEP-60 12 25000

20 RADHIKA GANESAN 06-MAR-66 11 31000

21 PAMPA ROY 11-DEC-74 12 28000

23 SRINIWAS REDDY 25-AUG-64 31 26000

24 VALLABH ROY 11-DEC-74 41 32000

25 BAHAR MIRPURI 09-FEB-69 22 29000

8 rows selected.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Query 6 : Write SQL code to list the first names and last names of the employees who were born before 01-JAN-1972 and who are posted in the western region.**

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**SELECT EMP\_FNAME,EMP\_LNAME**

**FROM EMP, STORE, REGION**

**WHERE (REGION.REGION\_DESC='WEST'**

**AND EMP.STORE\_CODE=STORE.STORE\_CODE)**

**AND (EMP.EMP\_DOB < '01-JAN-72'**

**AND STORE.REGION\_CODE=REGION.REGION\_CODE);**

EMP\_FNAME EMP\_LNAME

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APRAJITA RAKSHAK

KASHISH SHUKLA

BAHAR MIRPURI

MOHANA SETH

4 rows selected.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Query 7 : Write SQL code that will for each store print the name of manager along with the store details.**

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**SELECT STORE\_NAME,EMP\_FNAME,EMP\_LNAME,YTD\_SALES,REGION\_DESC**

**FROM STORE,EMP,REGION**

**WHERE STORE.EMP\_CODE=EMP.EMP\_CODE**

**AND STORE.REGION\_CODE=REGION.REGION\_CODE;**

STORE\_NAME EMP\_FNAME EMP\_LNAME YTD\_SALES REGION\_DES

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SUCCESS JUNCTION KASHISH SHUKLA 000555.76 WEST

CURIOSITY CIRCLE ROHIT CHANDANI 568000.00 SOUTH

OPPORTUNITY SQUARE GAZAL SINGH 986785.40 EAST

CENTRAL DELUGE VIKRANT GOKHALE 2930098.35 EAST

ATTRIBUTE ALLEY ATHARVA PALIWAL 944568.66 NORTH

DATABASE CORNER CHANCHAL BHATI 1420000.34 WEST

6 rows selected.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Query 8: Write SQL code to print store code, store name, region name for each store.**

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**SELECT STORE\_CODE,STORE\_NAME,REGION\_DESC**

**FROM STORE,REGION**

**WHERE STORE.REGION\_CODE=REGION.REGION\_CODE;**

STORE\_CODE STORE\_NAME REGION\_DES

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21 SUCCESS JUNCTION WEST

22 DATABASE CORNER WEST

11 OPPORTUNITY SQUARE EAST

31 ATTRIBUTE ALLEY NORTH

12 CENTRAL DELUGE EAST

41 CURIOSITY CIRCLE SOUTH

6 rows selected.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*VIVA-VOCE\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

1. **What is SQL?**

**Ans:** **S**tructured **Q**uery **L**anguage or **SQL** is a standard Database language which is used to create, maintain and retrieve the data from relational databases like MySQL, Oracle, SQL Server, PostGres, etc.

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1. **Enlist functions of DBA.**

**Ans:**

* Schema definition
* Storage structure and Access Method definition
* Software installation and maintenance
* Database backup and recovery
* Security
* Authentication
* Performance monitoring
* Database Tuning
* Troubleshooting

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1. **What are the advantages of a RDBMS over a DBMS?**

**Ans:**

* Storage: RDBMS stores data in the form of tables unlike DBMS as file
* Avoid Data Redundancy: RDBMS utilizes keys and indexes in the table to avoid redundancies
* Normalization: RDBMS supports Normalization where as DBMS does not
* ACID: RDBMS are consistent and well structured. They obey ACID (Atomicity, Consistency, Isolation, Durability)
* Relationship: RDBMS maintains relationships among the tables
* Integrity constraints: RDBMS supports the integrity constraints at the schema level.

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1. **Differentiate between a relation and a table.**

**Ans:** A Table is a collection of related data held in a tabular format

within a database. In terms of the RDBMS, a table can be considered

a convenient representation of a relation, but the two are not

strictly equivalent. For instance, a SQL table can potentially

contain duplicate rows, whereas a true relation cannot contain

duplicate rows that we call as tuples. Similarly, representation as

a table implies a particular ordering to the rows and columns,

whereas a relation is explicitly unordered.

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1. **Differentiate between the 3GLs and the 4GLs.**

**Ans:**

* 3GLs are procedural languages because the instructions are procedure-oriented which means code tells the computer what to do as wells how to do. On other hand, 4GLs are non-procedural languages because the instructions only specify the computer what to do and does not tell how to do.
* In 3GLs, a large volume of assembly language and machine language instructions are generates as compared to 4GLs. 4GLs requires very less statements due to its reduced complexity.
* Most of 4GLs are associated with data processing and databases where as 3GLs with others.
* Examples:
  + 3GLs: C, C++, C#, JAVA, PASCAL, BASIC, etc.
  + 4GLs: SQL, Ramis, Visual FoxPro, etc.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* INFERENCES \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

* Studied and learned about relational model
* Implemented the relational model with SQL on Oracle 11g
* Created a database with tables EMP, STORE and REGION
* Implemented various queries on different tables which are related to each other in database

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**\*\*\*\*END\*\*\*\***