Lab 1 : Installation and Configuration of a DB

This Lab focuses on Installation and Configuration of a DB, with all the notions already seen in the relational database in S4 such as Tablespaces, User Creation, Data Definition Language (DDL, e.g., CREATE TABLE, ALTER TABLE, DROP TABLE) and Data Manipulation Language (DML, e.g., SELECT, INSERT, UPDATE, DELETE), etc.

1. Useful Syntaxes

1. **Tablespace creation**

```
CREATE TABLESPACE TABLESPACE_Name
DATAFILE 'C:\path\TABLESPACE_Name.dat'
SIZE 100M
AUTOEXTEND ON
ONLINE;
```

2. **Temporary Tablespace creation**

```
CREATE TEMPORARY TABLESPACE TempTABLESPACE_Name
TEMPFILE 'C:\path\TempTABLESPACE_Name.dat'
SIZE 100M
AUTOEXTEND ON;
```

3. **User creation**

```
alter session set "_ORACLE_SCRIPT"=true;

CREATE USER UserName
IDENTIFIED BY PasseWord
DEFAULT TABLESPACE TABLESPACE_Name
TEMPORARY TABLESPACE TempTABLESPACE_Name;
```

4. **Grant all rights to the user**

```
GRANT ALL PRIVILEGES TO UserName;
connect UserName/PasseWord@XE;
```

5. Table creation and constraints

```
CREATE TABLE table_name (
    column1 datatype1 [NOT NULL],
    column2 datatype2 [NOT NULL],
    CONSTRAINT constraintName1 constraintType]);
    ...
);
----- More Info about constraints
Four types of constraints
-UNIQUE (column1[,column2])
-PRIMARY KEY (column1[,column2])
-FOREIGN KEY (column1 [,column2]) REFERENCES [schma.]parentTableName
(column1 [,column2]) [ON DELETE { CASCADE | SET NULL }]
-CHECK (condition)


--Deleting a Table
DROP TABLE Table_Name;


ALTER TABLE table_name
ADD CONSTRAINT constraint_name constraint_type (column_name);
```

6. Data Manipulation Language

```
INSERT INTO table_name (column1, column2, ...)
VALUES (value1, value2, ...);

SELECT column_name FROM table_name;

UPDATE table_name
SET column_name = new_value
WHERE condition;

DELETE FROM table_name
WHERE condition;
```

2. Lab Work

1. Download *Oracle* from the link: https://bit.ly/49kjNkL ;
2. *IMDb (Internet Movie Database)* is a sample database that contains movie-related information, with around (1050000) records for each table. Check the database at: https://imdb.to/49kjM0h ,https://datasets.imdbws.com/, and to download the (.CSV) files directly: https://bit.ly/3uv8QxU . Discuss the schema of the db.
3. Create two TableSpaces **imdb_TBS** and **imdb_TempTBS of 1 Go.**
4. Create a user "**imdbManager"** with passeword **"imdb2024"** by assigning it the two tablespaces created, and Grant all privileges to "**imdbManager" .**Verify the creation of the user.
5. Create tables discussed in (Q2). Verify that the tables were created correctly.
6. Perform the following SQL queries:
   - Insertion of 20 rows in each table,

- Selection of everything in table “ratings”, where average rating equals “6”;
- Find the movies released in a specific year.
- Retrieve information about a specific movie.
- Find the average rating for a particular genre, like “Action”
- Retrieve the top 10 movies by rating.

3. Homework

By the end of each Lab, a report should be done, that contains all the details of the elaborate work during the Lab session. The report is going to be submitted later on.