Modelo Físico DBMS Oralce

AULA PL03

Hugo Peixoto

2018 – 2019 Universidade do Minho

Conteúdo da UC

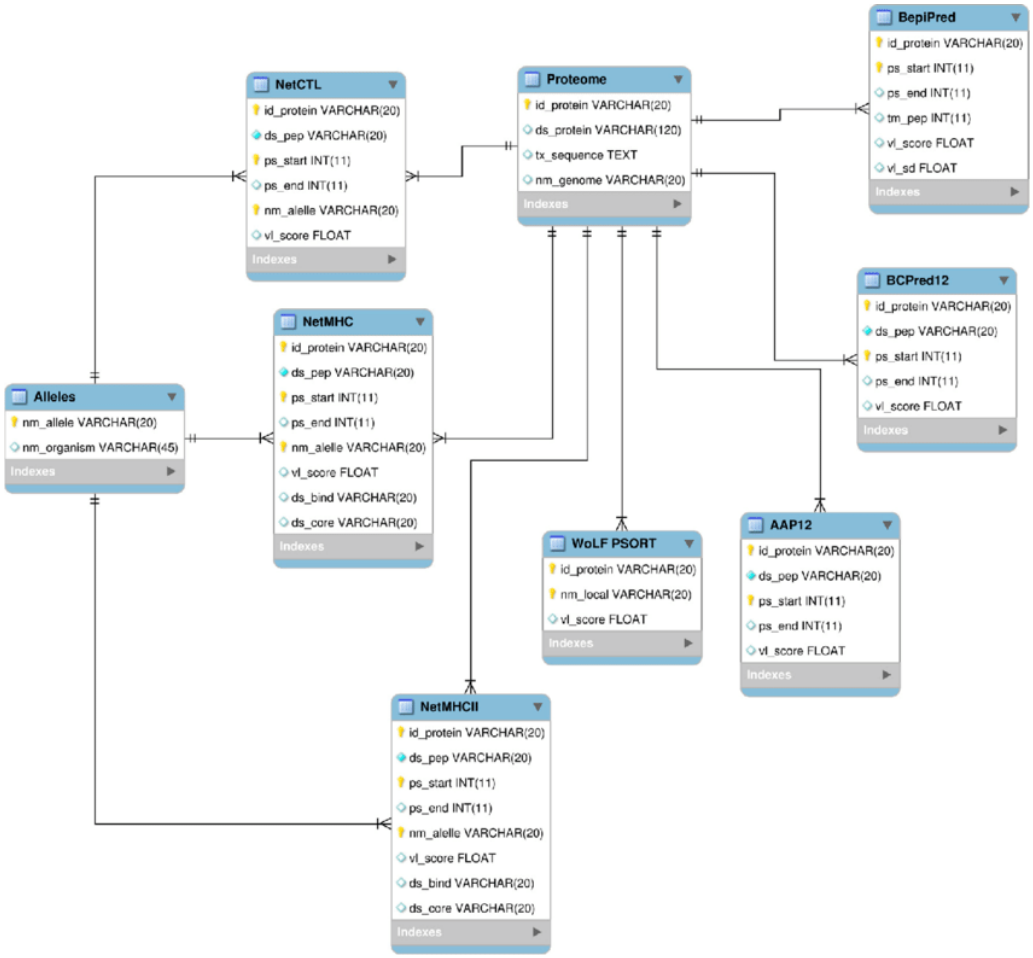
http://hpeixoto.github.io/nosql

- Relational Database
- Oracle
- Tablespaces | Datafiles
- Manage Database Size
- Objects
- Create Table
- SQL: create table | insert and select statments

Relational Database

- A database that conforms to the relational model. The relational model has the following major aspects:
  - Structures
    - Well-defined objects store or access the data of a database.
  - Operations
    - Clearly defined actions enable applications to manipulate the data and structures of a database.
  - Integrity rules
    - Integrity rules govern operations on the data and structures of a database.

Relational Database




ORACLE®

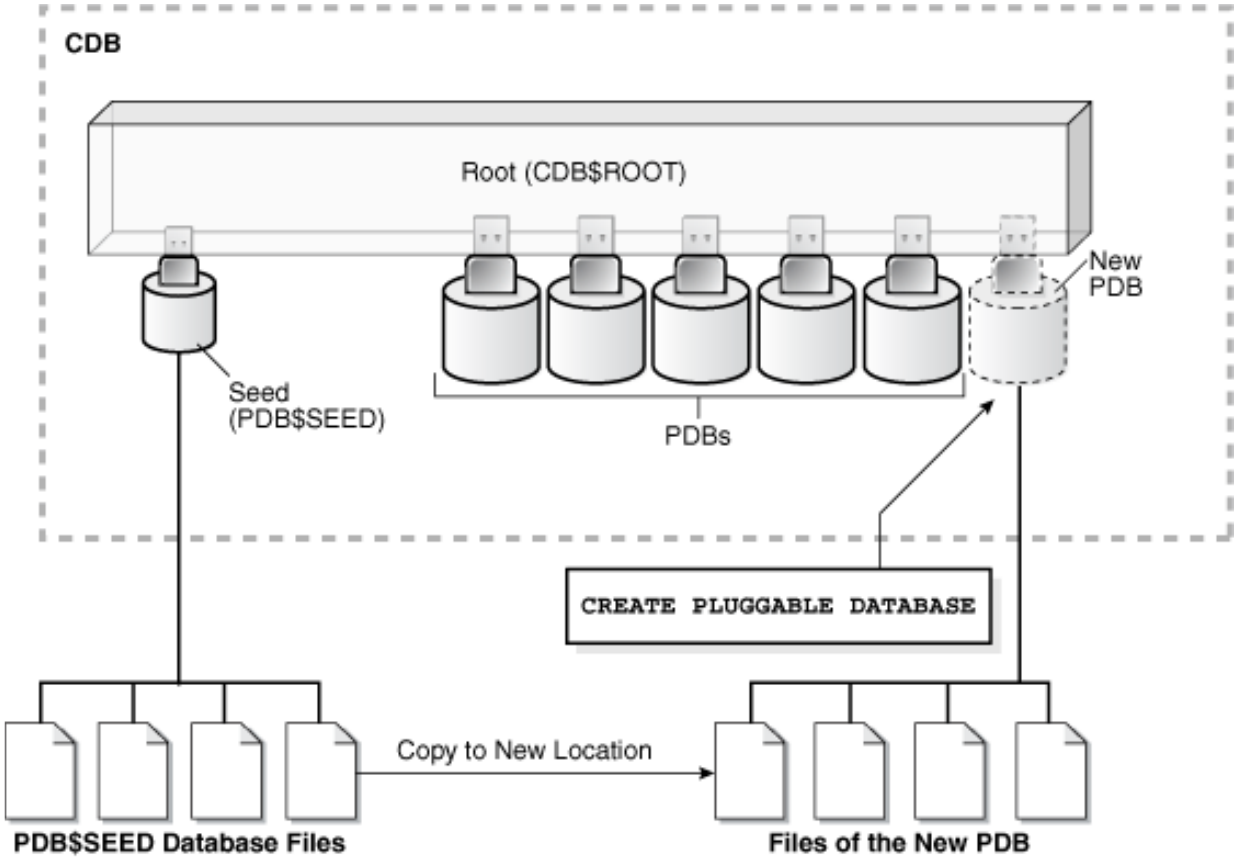
Oracle Database

Schema Objects:

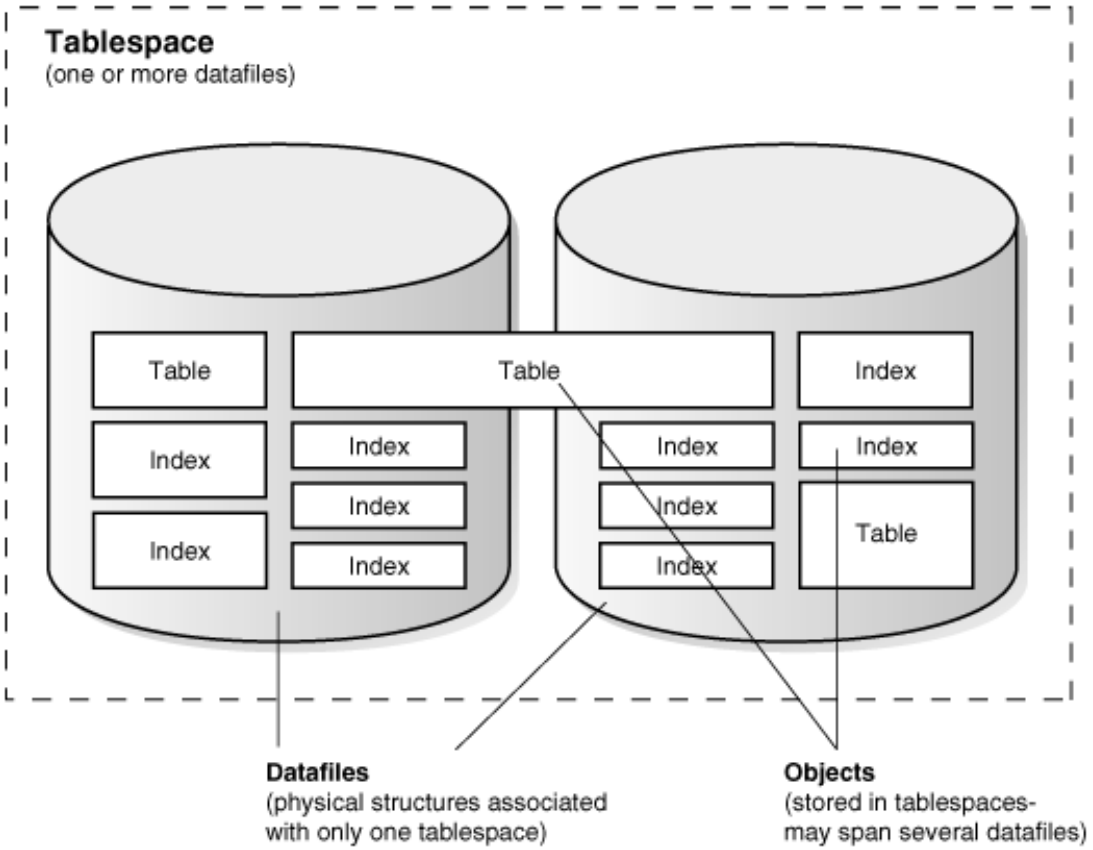
- A schema is a way to logically group objects in a single collection and provide a unique namespace for objects

User account + collection of all objects therein

Oracle Database 12c



Tablespaces | Datafiles | Objects



TableSpaces | DataFiles

Databases, tablespaces, and datafiles are closely related, but they have important differences:

An Oracle database consists of one or more logical storage units called **tablespaces**, which collectively store all of thedatabase's data

Each tablespace in an Oracle database consists of one or more files called **datafiles**, which are physical structures that conform to the operating system in which Oracle is running.

A database's data is collectively stored in the datafiles that constitute each tablespace of the database. For example, the simplest Oracle database would have one tablespace and one datafile.

Another database can have three tablespaces, each consisting of two datafiles (for a total of six datafiles).

Database Size

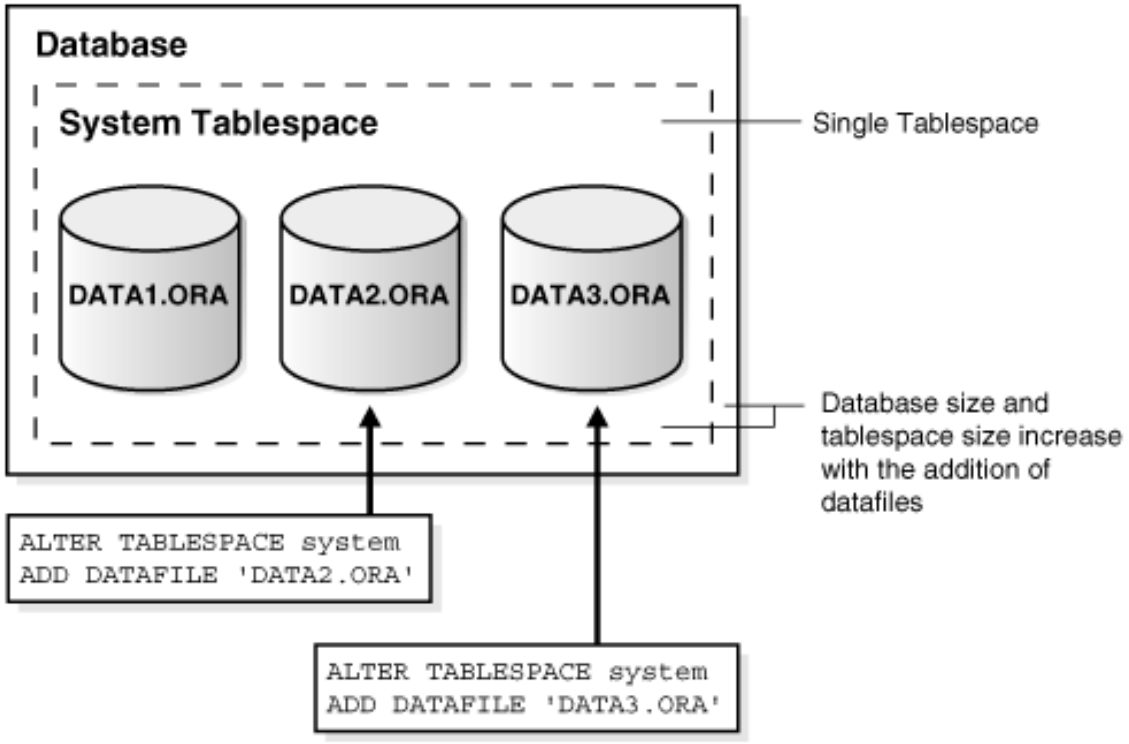
You can enlarge a database in three ways:

1)Add a datafile to a tablespace

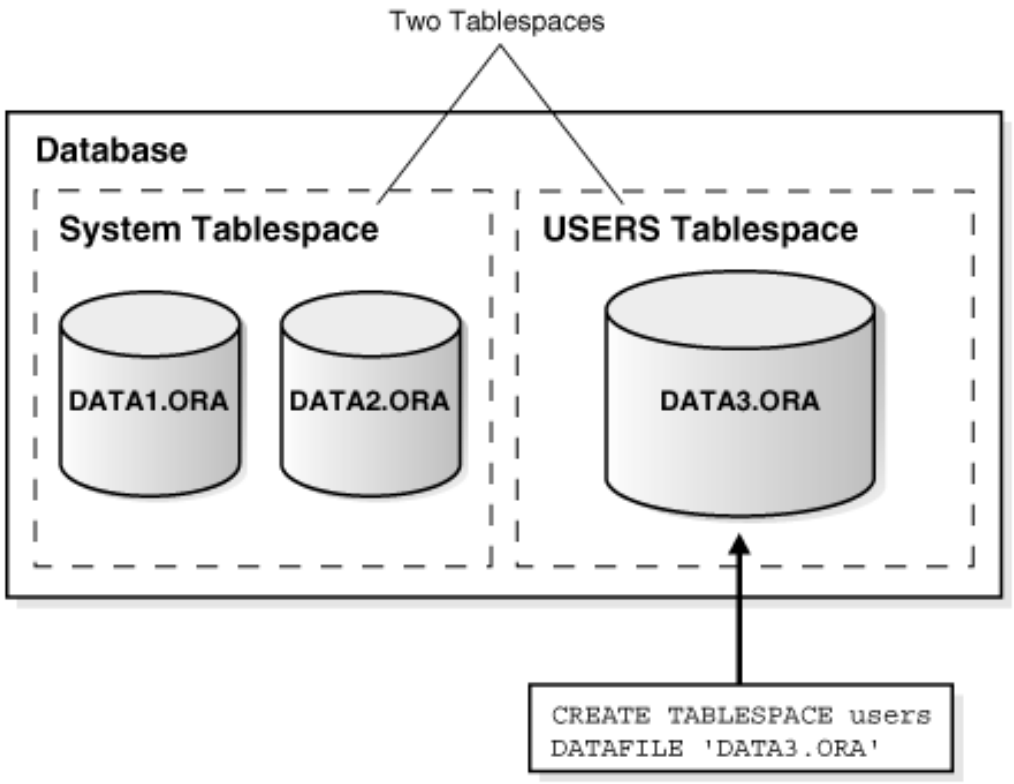
2)Add a new tablespace

3) Increase the size of a datafile

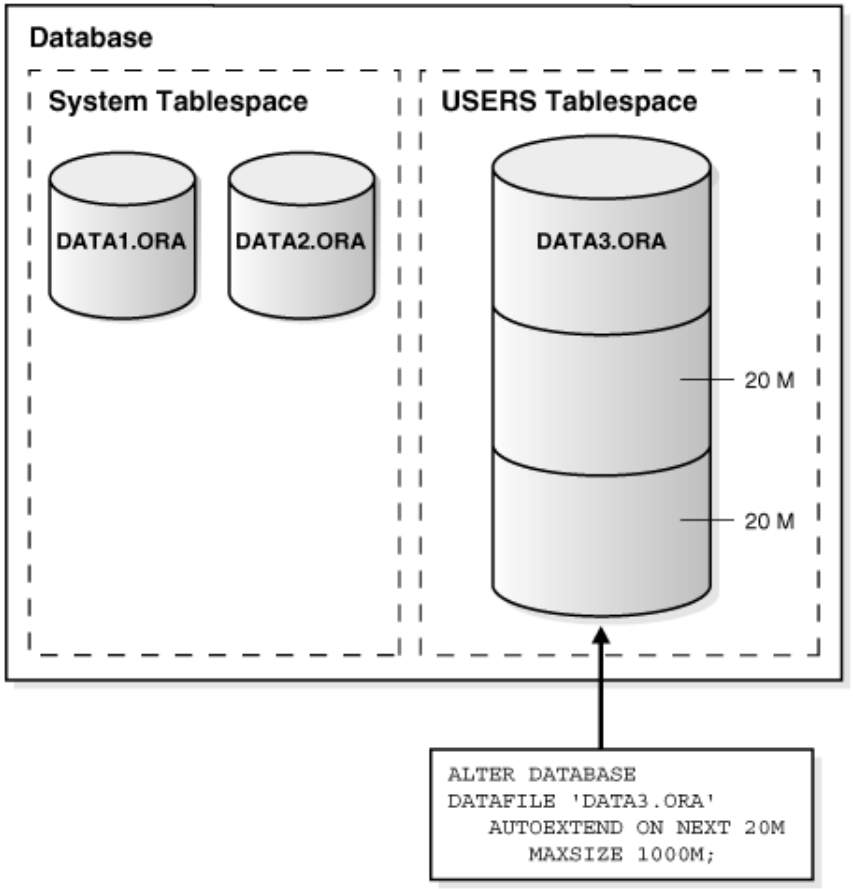
Database Size : Add datafile



Database Size : New Tablespace



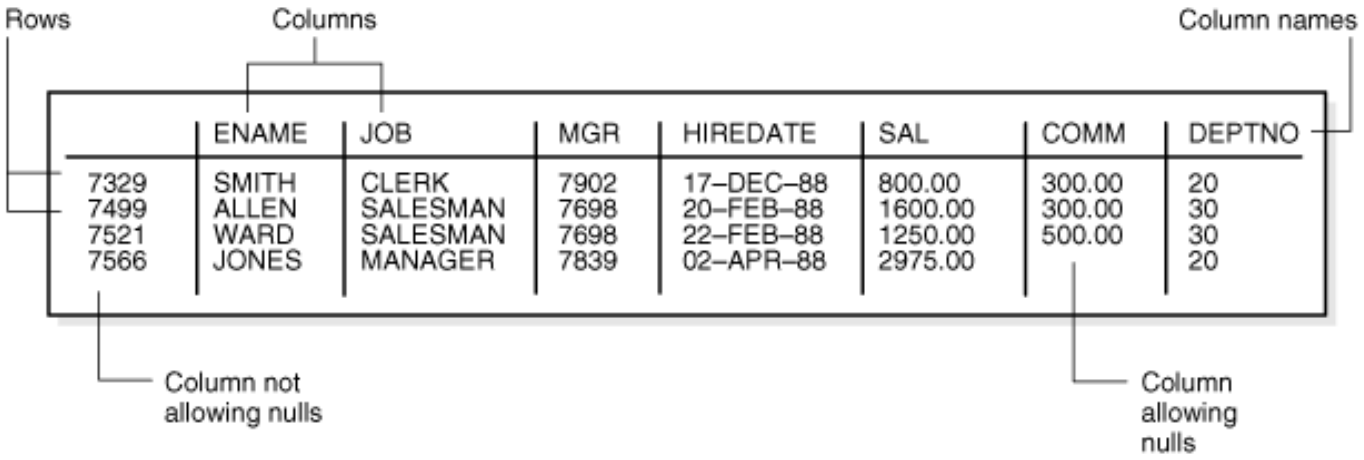
Database Size : Datafile size



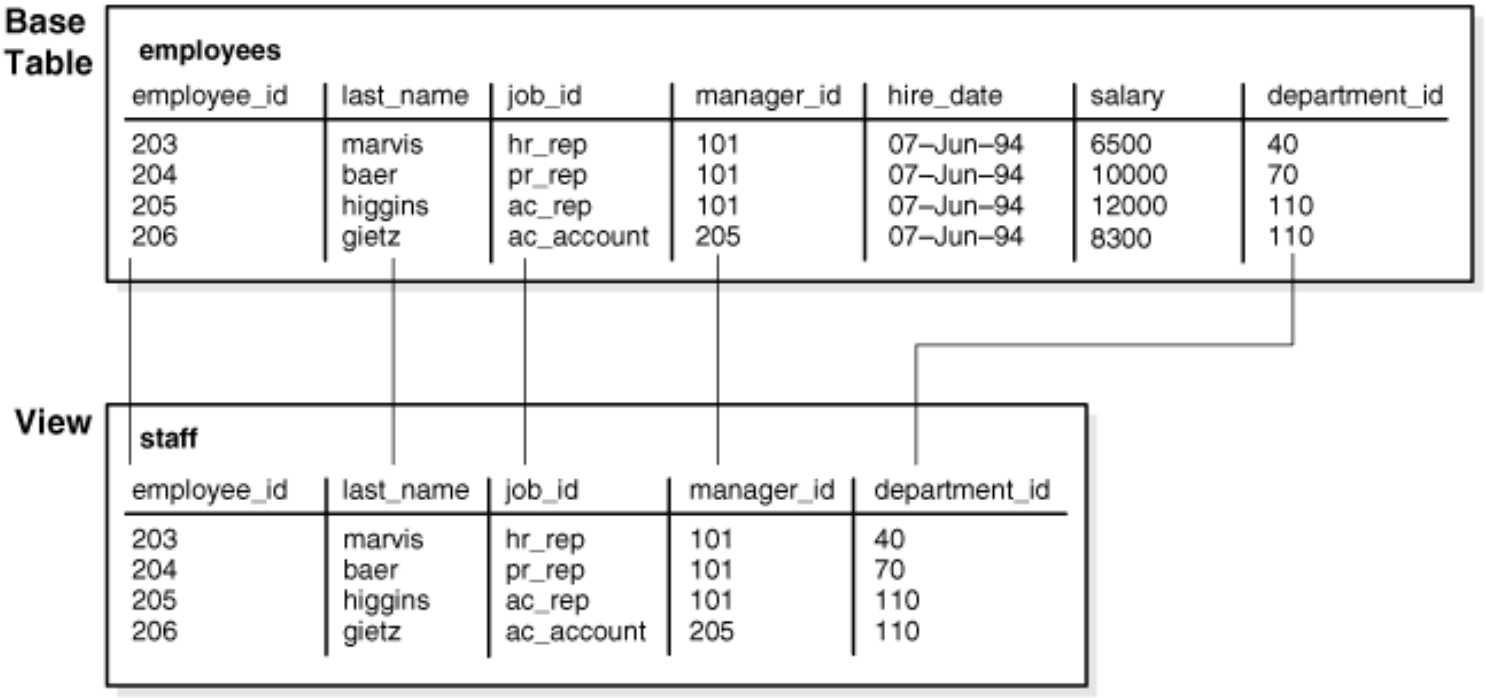
Objects

- Tables;
- Views;
- Materialized Views;
- Dimensions;
- Sequences;
- Synonyms;
- Indexes;
- Databaselinks;
- Stored Procedures;
- …

Objects: Tables



Objects: Views



Objects: Sequences

Sequence numbers are Oracle integers of up to 38 digits defined in the database.

A sequence definition indicates general information, such as the following:

- The name of the sequence
- Whether the sequence ascends or descends
- The interval between numbers
- WhetherOracle should cache sets of generated sequence numbers in memory

Objects: Synonyms

A synonym is an alias for any table, view, materialized view, sequence, procedure, function, package, type, Java class schema object, user-defined object type, or another synonym.

Synonyms are often used for security and convenience. For example, they can do the following:

- Mask the name and owner of an object
- Provide location transparency for remote objects of a distributed database
- Simplify SQL statements for database users
- Enable restricted access similar to specialized views when exercising fine-grained access control

Objects: Indexes

Indexes are optional structures associated with tables.

You can create indexes on one ormore columns of a table to speed SQL statement execution on that table.

SQL: Create Table

Example:

```
CREATE TABLE EDITORA (
        "ID_EDITORA" NUMBER(3,0) NOT NULL ENABLE,
        "NOME" VARCHAR2(200 BYTE) NOT NULL ENABLE,
                CONSTRAINT "EDITORA_PK" PRIMARY KEY ("ID_EDITORA")
);
```

SQL: Insert statment

Example:

```
> insert into review values (7,7, to_date('19-12-2017', 'dd-mm-yyyy'), 'MAU');
```

SQL: Select statment

Example:

```
> select count(*) from review;
```

Modelo Físico DBMS Oralce

AULA PL03

Hugo Peixoto

2018 – 2019 Universidade do Minho