Importação VM; SQLDeveloper; Introdução ao RDBM ORACLE

# AULA PL02

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2019 – 2020 Universidade do Minho

- Instalação do Virtualbox
- Importação da Máquina Virtual
- Correção de conflitos de aceleração
- Testes de Ligação à  VM
- Instalação do SQLDeveloper
- Modelo Físico Oracle

# Instalação do Virtualbox

https://www.virtualbox.org/wiki/Downloads

Instalar Extension Pack

# Importação da Máquina Virtual

Fazer o Import da virtual appliance:

https://mega.nz/#!AxEAESSK!7MXGK3LNJ6tshvystKT7cSvI3BoJAKedKSHQlal6yPg

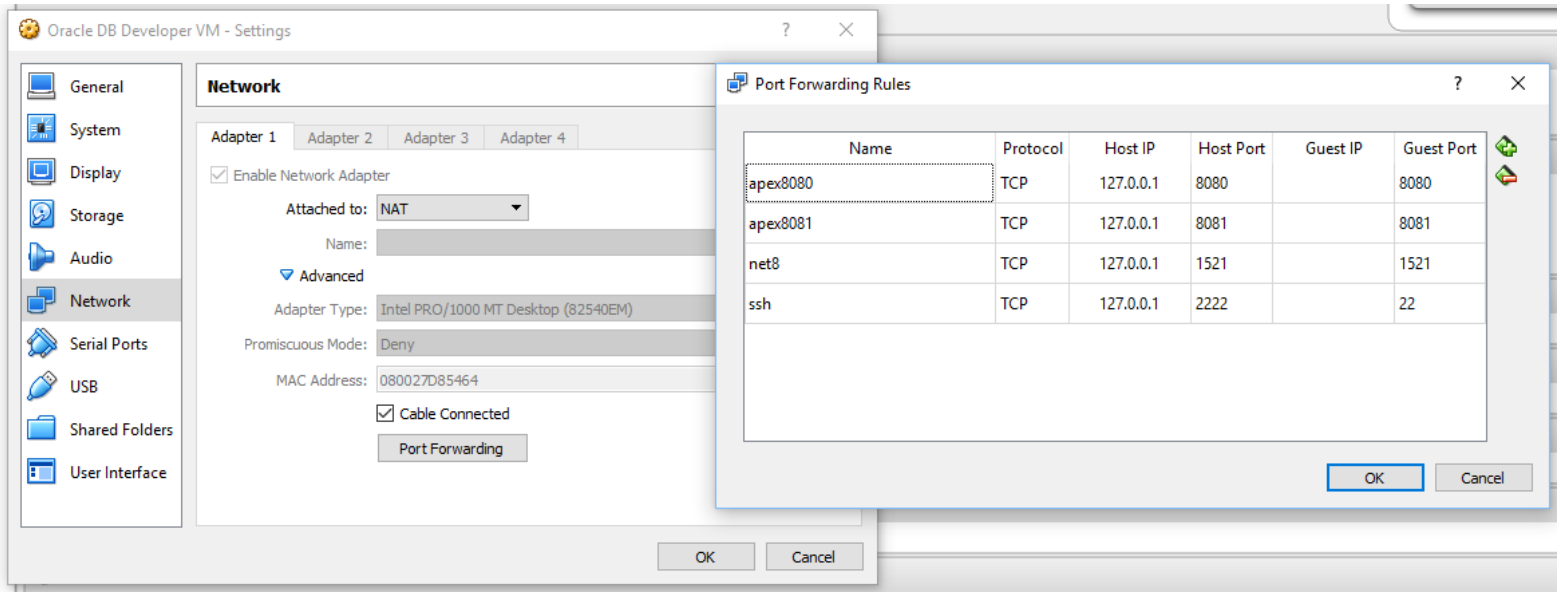
-> File -> Import Virtual Appliance

-> Validar as configurações da Máquina (CPU, Memória; Aceleração 3d, etc);

Nota: Memória ram mínima 2048Gb.

# Importação da Máquina Virtual

Validar configurações do Port Forwarding:



# Correção de conflitos de aceleração

- Caso a máquina não arranque por erro no processador.
  - Aceder à bios do host e ativar a opção de virtualização respetiva.

# Testes de Ligação à VM

- Windows: Instalar putty
- Mac OS + Unix: Terminal

  - Aceder por ssh à máquina virtual

  - Todas as senhas da VM são oracle

# Instalação do SQLDeveloper

https://mega.nz/#!cgdXyQSA!KgS5bwDJcDxYKBmm_fq39R_wheB3umbNRs193VdmkgM

Instalar ou verificar a instalação do JRE;

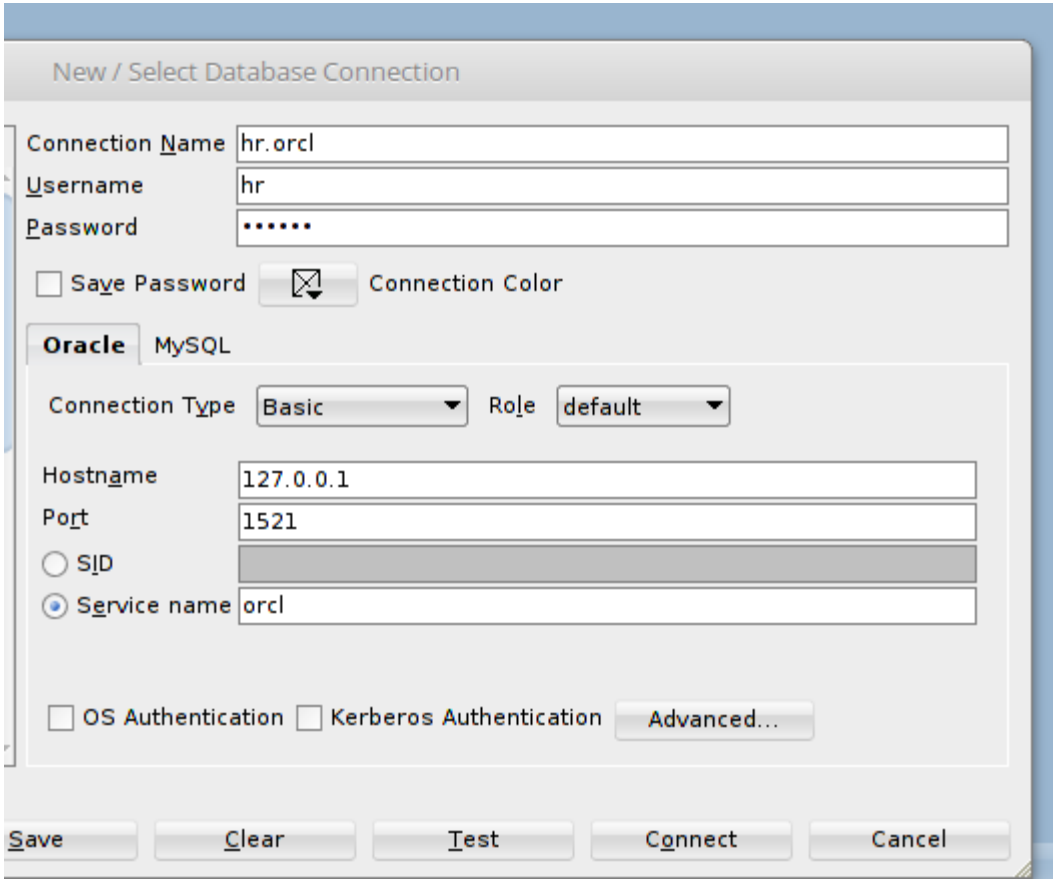
Copiar a pasta do SQLDeveloper para a localização desejada;

Abrir o programa e configurar uma ligação

# Instalação do SQLDeveloper

user: hr

password: oracle



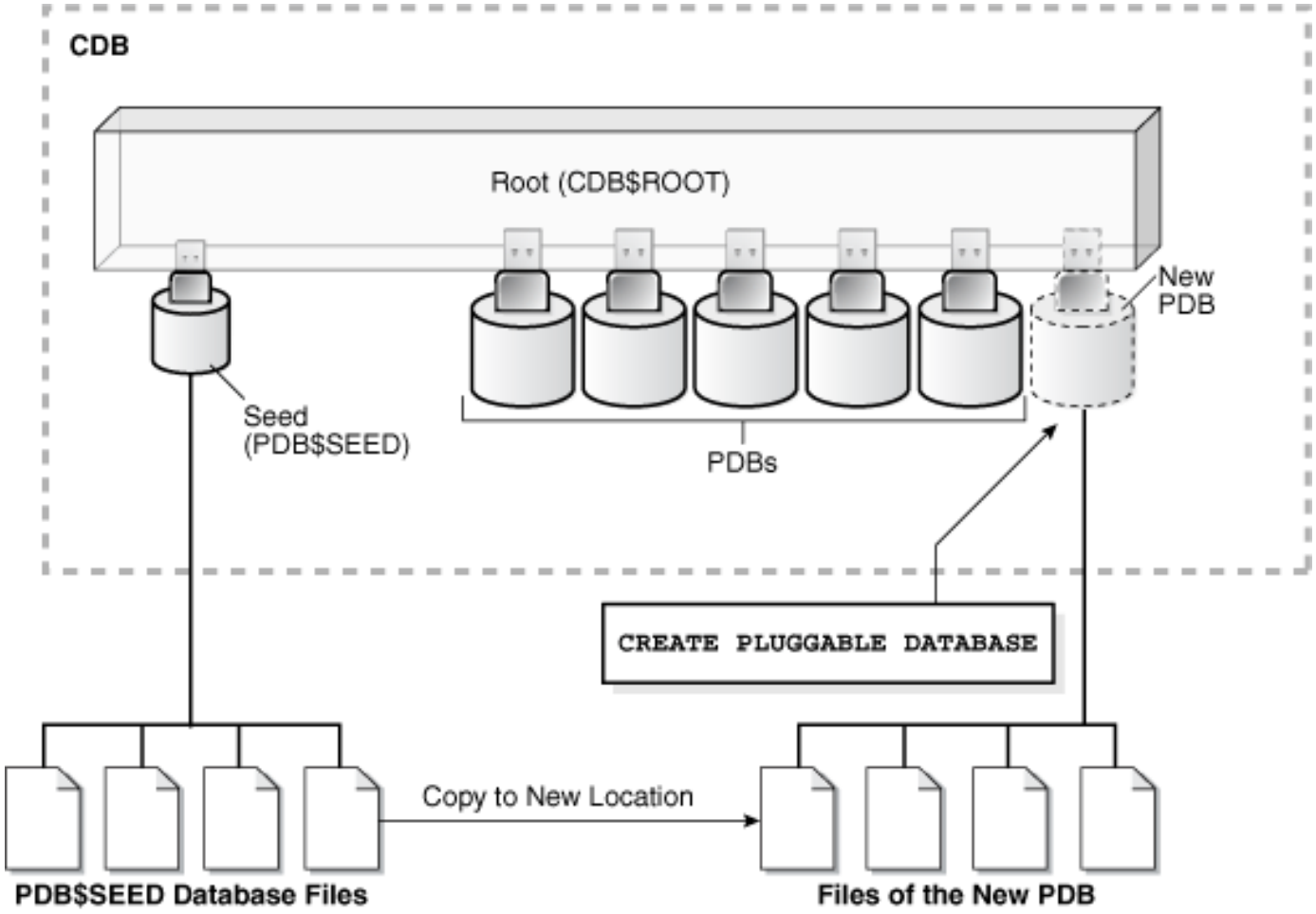

ORACLE®

# Oracle Schema

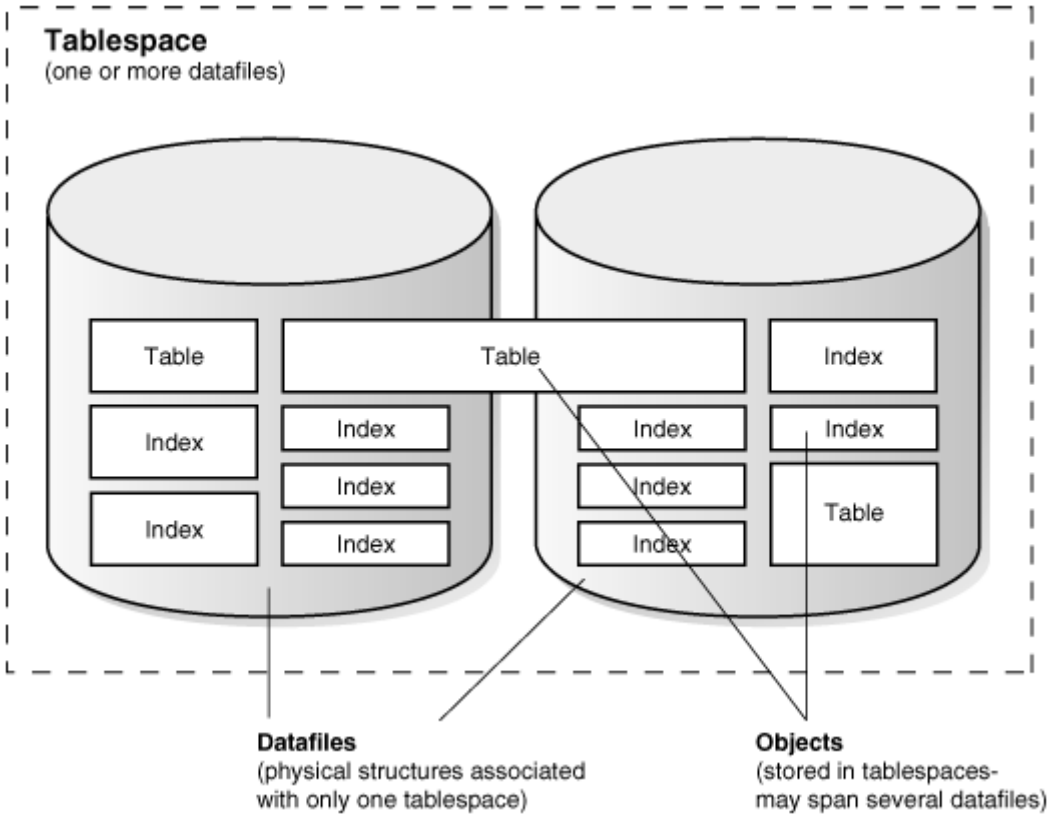
A schema is a way to logically group objects in a single collection and provide a unique namespace for objects

**User account + collection of all objects therein**

# Pluggable Databases



# Tablespaces | Datafiles | Objects



# Datafile + Tablespaces

- 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 the database'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).

# More Space for a Database! How?!

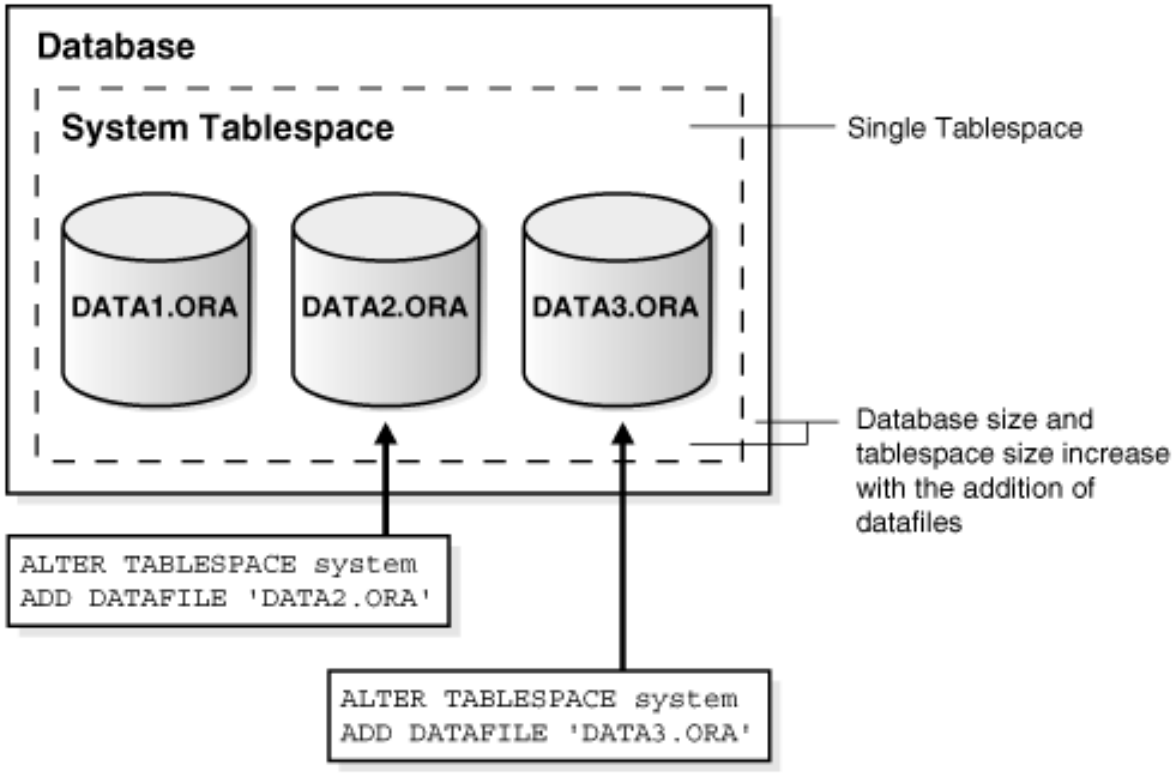
- You can enlarge a database in three ways:

  1) Add a datafile to a tablespace

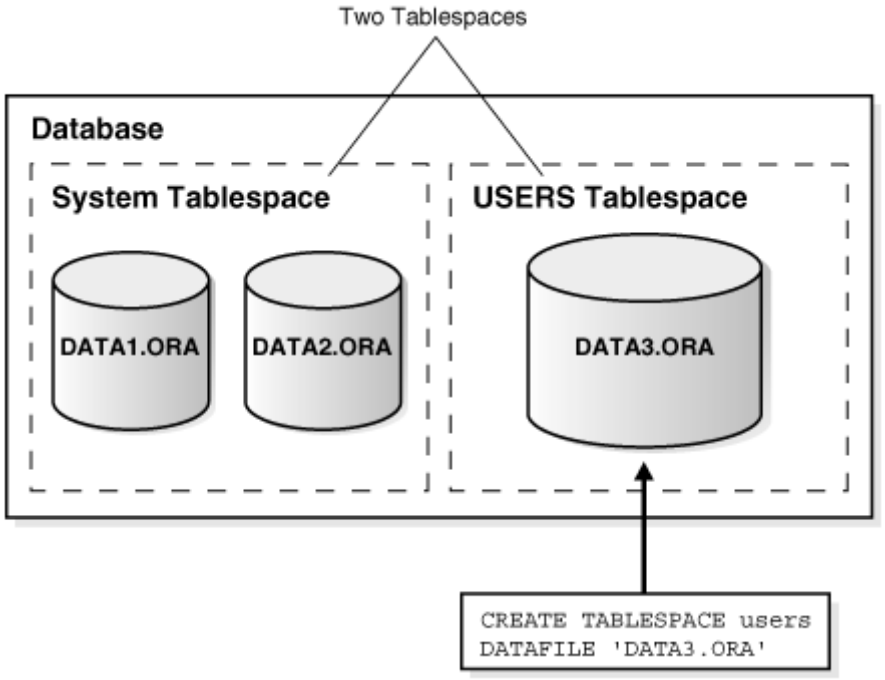
  2) Add a new tablespace

  3) Increase the size of a datafile

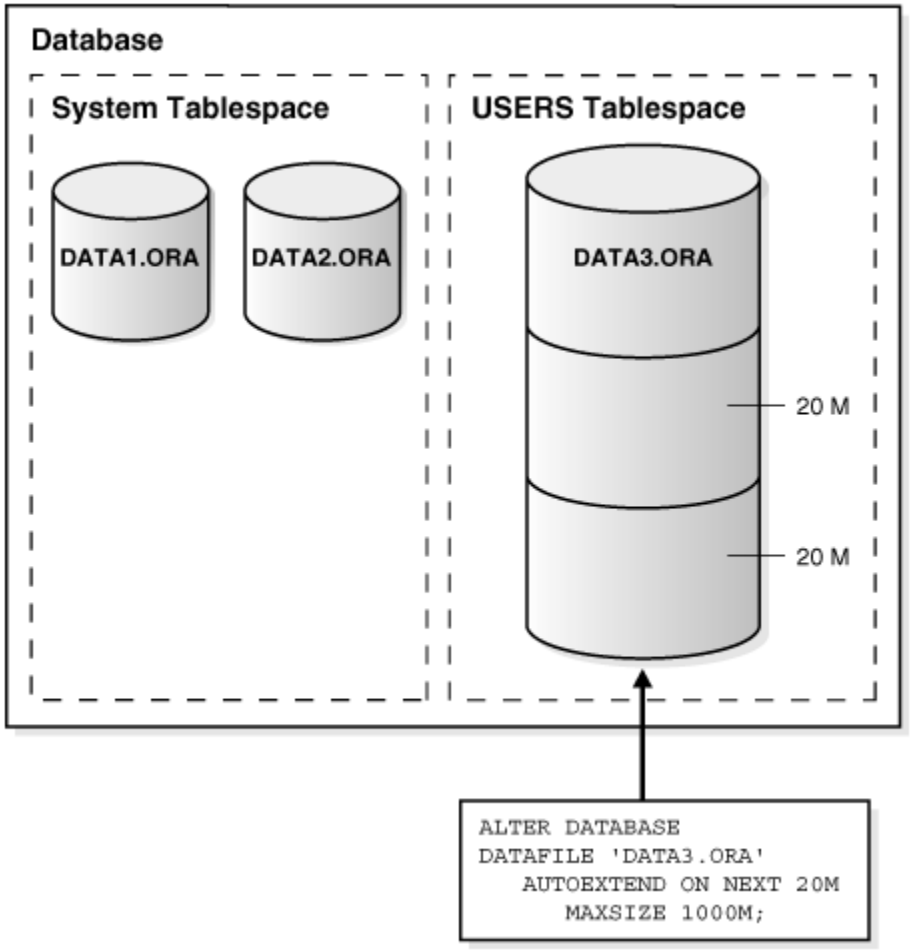
# 1) Add datafile to Tablespace



# 2) New Tablespace



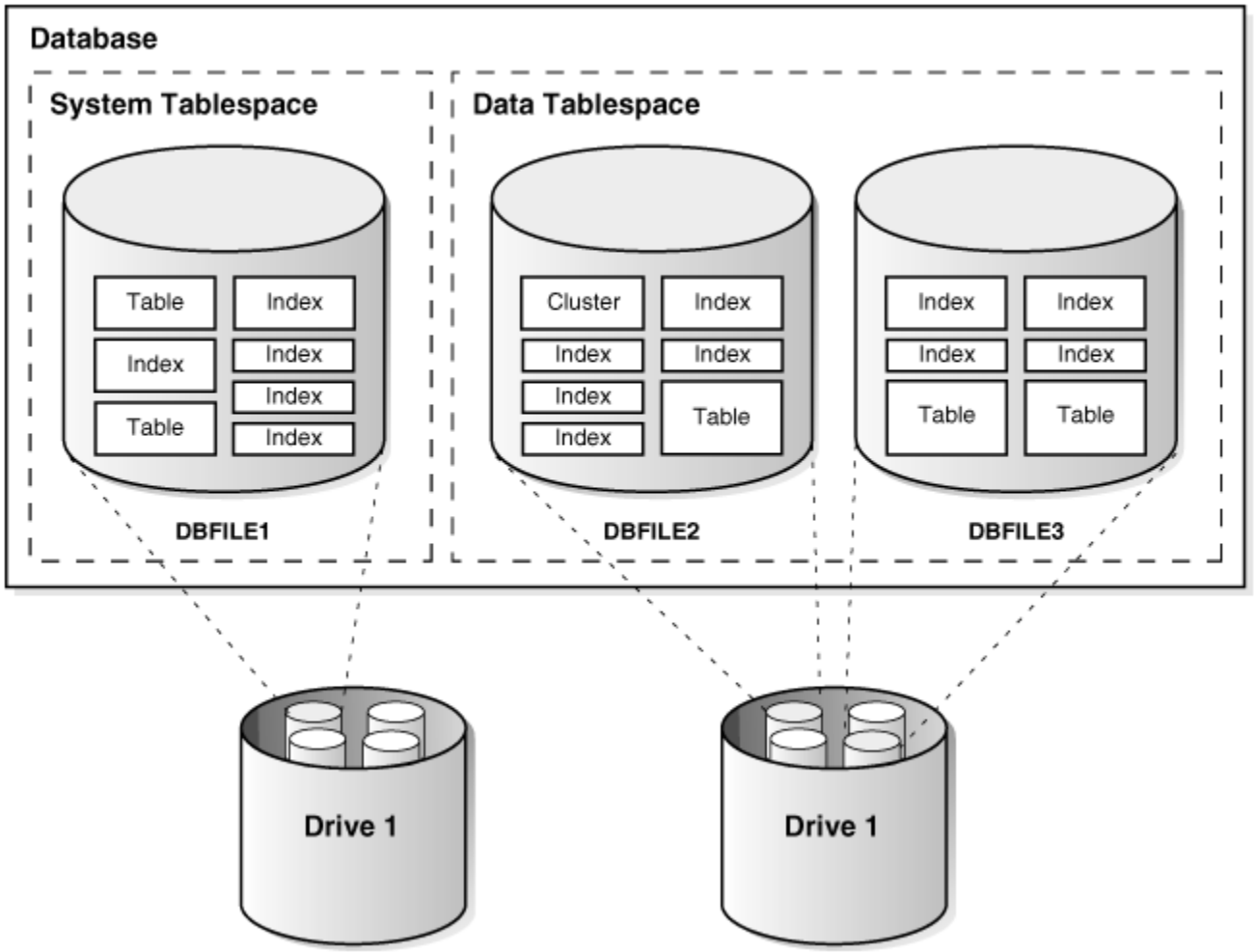
# 3) Increase Datafile size



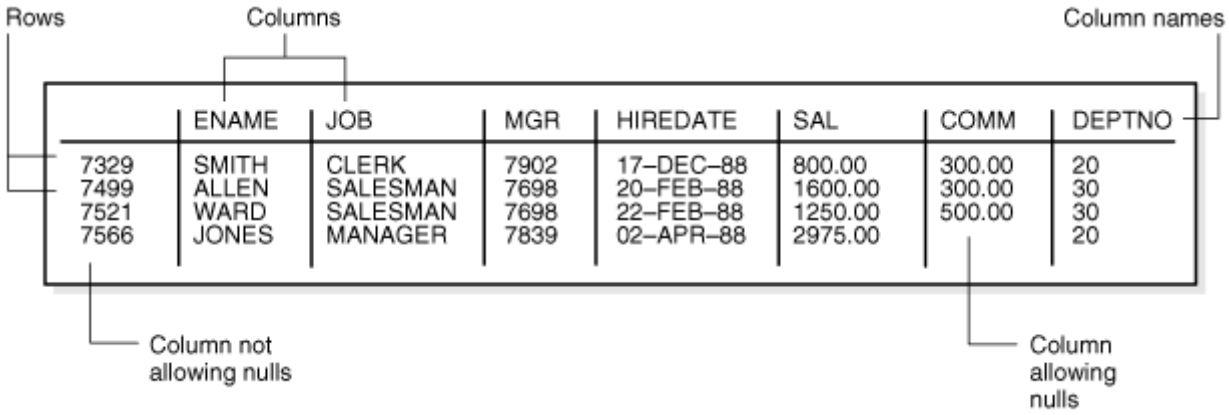
# Schema Objects

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

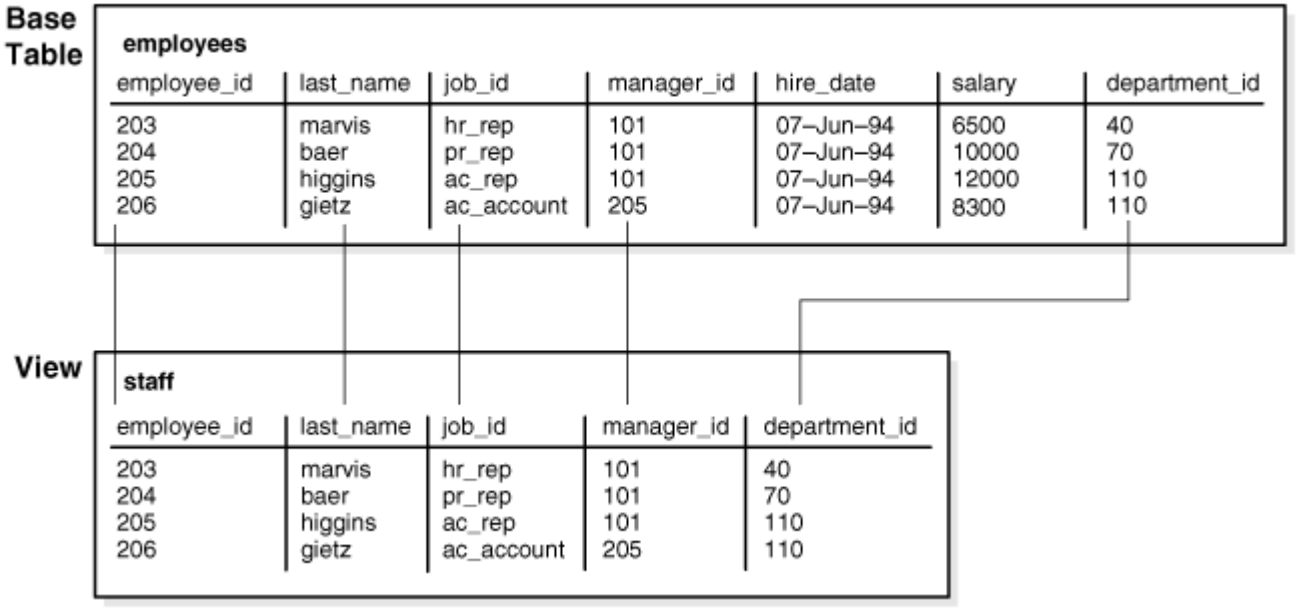
# Schema Objects



# Tables


Rows
Columns
Column names
ENAME
JOB
MGR
HIREDATE
SAL
COMM
DEPTNO
7329 SMITH CLERK 7902 17–DEC–88 800.00 300.00 20
7499 ALLEN SALESMAN 7698 20–FEB–88 1600.00 300.00 30
7521 WARD SALESMAN 7698 22–FEB–88 1250.00 500.00 30
7566 JONES MANAGER 7839 02–APR–88 2975.00 20
Column not allowing nulls
Column allowing nulls

# Views


Base Table
employees
employee_id | last_name | job_id | manager_id | hire_date | salary | department_id
203 | marvis | hr_rep | 101 | 07–Jun–94 | 6500 | 40
204 | baer | pr_rep | 101 | 07–Jun–94 | 10000 | 70
205 | higgins | ac_rep | 101 | 07–Jun–94 | 12000 | 110
206 | gietz | ac_account | 205 | 07–Jun–94 | 8300 | 110
View
staff
employee_id | last_name | job_id | manager_id | department_id
203 | marvis | hr_rep | 101 | 40
204 | baer | pr_rep | 101 | 70
205 | higgins | ac_rep | 101 | 110
206 | gietz | ac_account | 205 | 110

# 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

- Whether Oracle should cache sets of generated sequence numbers in memory

# 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

# Indexes

- Indexes are optional structures associated with tables.

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

# Create Tablespace

```
create tablespace aebd_tables
  datafile
'\u01\app\oracle\oradata\orcl12\orcl\aebd_tables_01.dbf'
  size 100M;

create temporary tablespace aebd_temp
  tempfile
'\u01\app\oracle\oradata\orcl12\orcl\aebd_temp_02.dbf'
  size 50M;
```

# Create Tablespace

```
SElECT *
FROM dba_tablespaces
WHERE TABLESPACE_NAME = 'aebd_tables';

SElECT *
FROM dba_tablespaces
WHERE TABLESPACE_NAME = 'aebd_temp';
```

# Create User

```
CREATE
USER grey
IDENTIFIED BY grey110
DEFAULT TABLESPACE aebd_tables
TEMPORARY TABLESPACE aebd_temp
QUOTA 10M on aebd_tables;

GRANT CONNECT TO grey;

GRANT RESOURCE TO grey;
```

# ALTER USER command

```
ALTER USER Scott
IDENTIFIED by New_Pa$$w0rd
DEFAULT TABLESPACE Data01
TEMPORARY TABLESPACE Temp
QUOTA 100M ON Data01
QUOTA 0 ON Inventory_TBS;
```

# DROP USER command

DROP USER User105;
DROP USER Scott CASCADE;

Dropping a user causes the user and the user schema to be immediately deleted from the database.

If the user has created objects within their schema, it is necessary to use the CASCADE option in order to drop a user.

If you fail to specify CASCADE when user objects exist, an error message is generated and the user is not dropped.

In order for a DBA to drop a user, the DBA must have the DROP USER system privilege.

# Data Dictionary Tables for User Accounts

The only data dictionary table used by a DBA for user account information is DBA_USERS.

```
SELECT username, account_status, default_tablespace
FROM dba_users;
```

| USERNAME | ACCOUNT_STATUS | DEFAULT_TABLESPACE |
|---|---|---|
| OUTLN | OPEN | SYSTEM |
| USER350 | OPEN | USERS |
| DBOCK | OPEN | DATA01 |
| SYS | OPEN | SYSTEM |
| SYSTEM | OPEN | SYSTEM |
| USER349 | EXPIRED | SYSTEM |
| SCOTT | EXPIRED | USERS |
| TSMSYS | EXPIRED & LOCKED | SYSTEM |
| DIP | EXPIRED & LOCKED | SYSTEM |
| DBSNMP | EXPIRED & LOCKED | SYSAUX |
| ORACLE_OCM | EXPIRED & LOCKED | SYSTEM |

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