

# UNIVERSIDAD DE GUADALAJARA

CENTRO UNIVERSITARIO DE CIENCIAS EXACTAS E INGENIERÍA

DEPARTAMENTO DE CIENCIAS COMPUTACIONALES

Administración de Bases de Datos

## Seguridad



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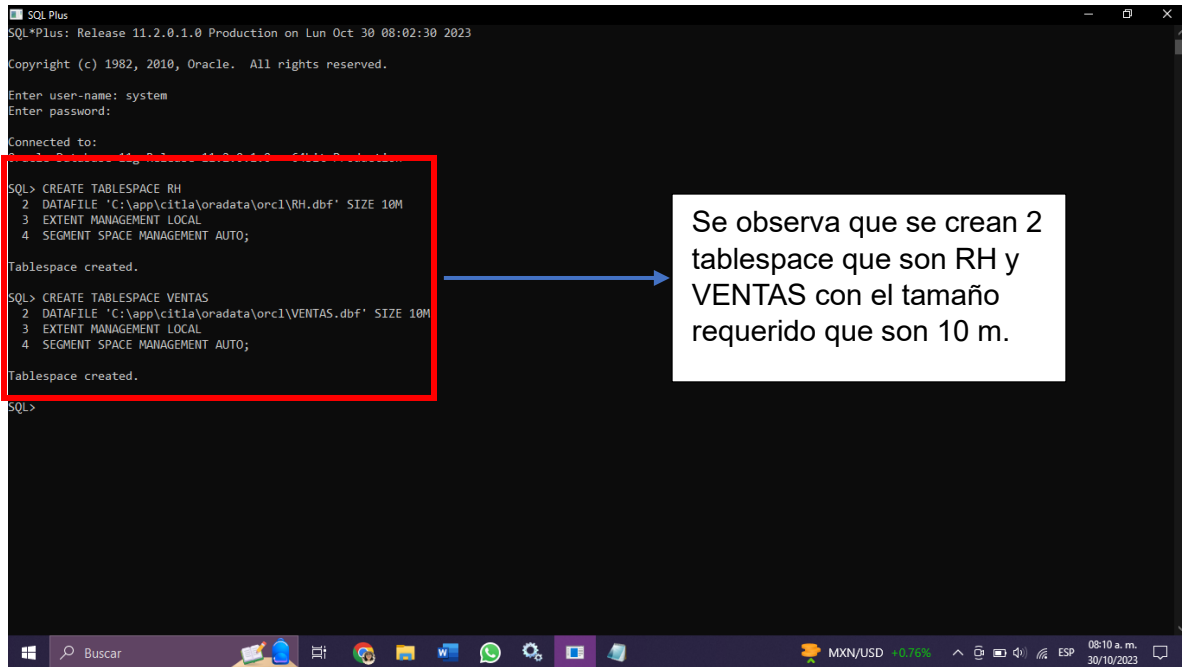
**Sección:** D01

**Profesor:** Sergio Javier Uribe Nava

**Carrera:** Ingeniería Informática

**Fecha:** 03/11/2023

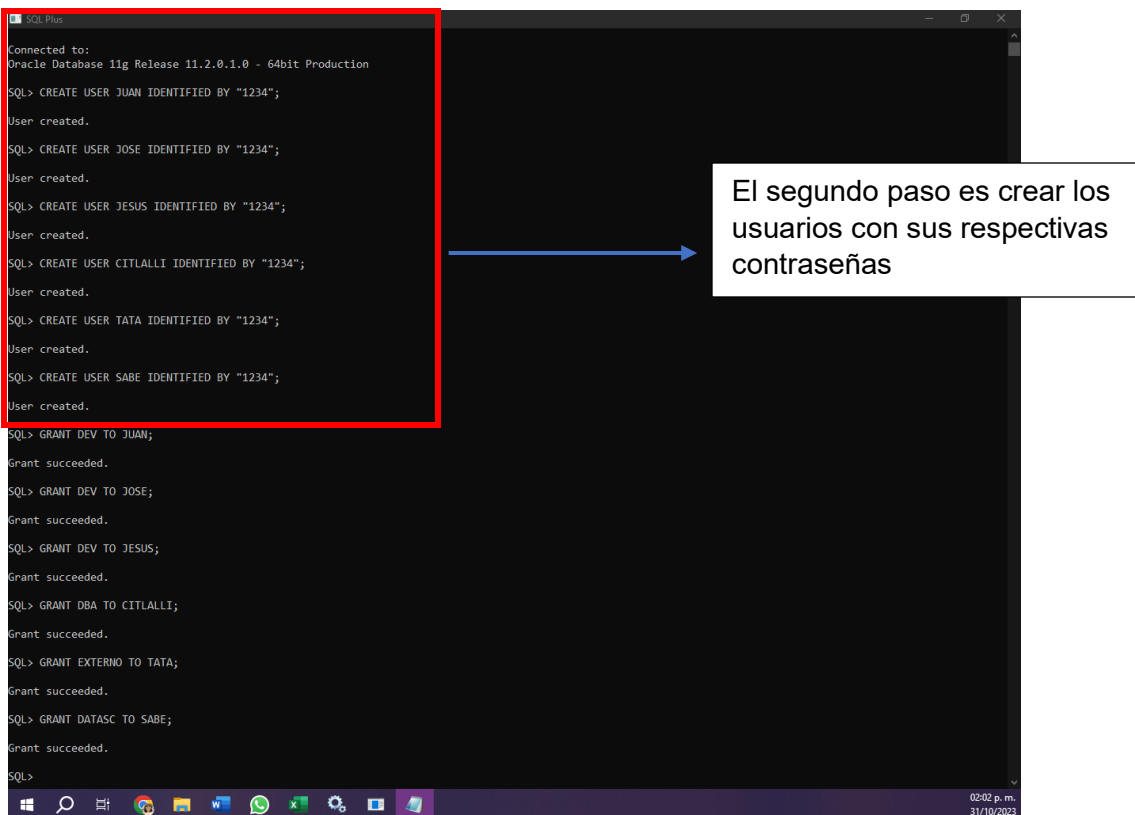
## 1.- Tablespaces



```
SQL Plus
SQL*Plus: Release 11.2.0.1.0 Production on Lun Oct 30 08:02:30 2023
Copyright (c) 1982, 2010, Oracle. All rights reserved.
Enter user-name: system
Enter password:
Connected to:
Oracle Database 11g Release 11.2.0.1.0 - 64bit Production
SQL> CREATE TABLESPACE RH
2 DATAFILE 'C:\app\citla\oradata\orcl\RH.dbf' SIZE 10M
3 EXTENT MANAGEMENT LOCAL
4 SEGMENT SPACE MANAGEMENT AUTO;
Tablespace created.
SQL> CREATE TABLESPACE VENTAS
2 DATAFILE 'C:\app\citla\oradata\orcl\VENTAS.dbf' SIZE 10M
3 EXTENT MANAGEMENT LOCAL
4 SEGMENT SPACE MANAGEMENT AUTO;
Tablespace created.
SQL>
```

Se observa que se crean 2 tablespace que son RH y VENTAS con el tamaño requerido que son 10 m.

## 2.- Usuarios



```
SQL Plus
Connected to:
Oracle Database 11g Release 11.2.0.1.0 - 64bit Production
SQL> CREATE USER JUAN IDENTIFIED BY "1234";
User created.
SQL> CREATE USER JOSE IDENTIFIED BY "1234";
User created.
SQL> CREATE USER JESUS IDENTIFIED BY "1234";
User created.
SQL> CREATE USER CITLALLI IDENTIFIED BY "1234";
User created.
SQL> CREATE USER TATA IDENTIFIED BY "1234";
User created.
SQL> CREATE USER SABE IDENTIFIED BY "1234";
User created.
SQL> GRANT DEV TO JUAN;
Grant succeeded.
SQL> GRANT DEV TO JOSE;
Grant succeeded.
SQL> GRANT DEV TO JESUS;
Grant succeeded.
SQL> GRANT DBA TO CITLALLI;
Grant succeeded.
SQL> GRANT EXTERNO TO TATA;
Grant succeeded.
SQL> GRANT DATASC TO SABE;
Grant succeeded.
SQL>
```

El segundo paso es crear los usuarios con sus respectivas contraseñas

### 3.- Crear los roles DEV, EXTERNO y DATASC

```
SQL Plus
4 SEGMENT SPACE MANAGEMENT AUTO;
Tablespace created.

SQL> CREATE TABLESPACE VENTAS
2 DATAFILE 'C:\app\citla\oradata\orcl\VENTAS.dbf' SIZE 10M
3 EXTENT MANAGEMENT LOCAL
4 SEGMENT SPACE MANAGEMENT AUTO;
Tablespace created.

SQL> CREATE USER RH_APP identified by "1234" quota unlimited on RH;
User created.

SQL> CREATE USER VENTAS_APP identified by "1234" quota unlimited on VENTAS;
User created.

SQL> CREATE ROLE DEV;
Role created.

SQL> CREATE ROLE EXTERNO;
Role created.

SQL> CREATE ROLE DATASC;
Role created.

SQL> CREATE ROLE DBA;
CREATE ROLE DBA
*
ERROR at line 1:
ORA-01921: conflicto entre el nombre de rol 'DBA' y nombre de usuario o rol

SQL>
```

También se crean los usuarios de RH\_APP y VENTAS\_APP con sus respectivas cuotas en los tablespaces correspondientes.

Se crean los roles dev, externo y datasc porque el rol de dba ya está por defecto en la base de datos por eso genera error al querer crearlos.

### 4.- Asignar permisos a DEV y asignar DEV a desarrolladores

```
SQL Plus
Connected to:
Oracle Database 11g Release 11.2.0.1.0 - 64bit Production

SQL> CREATE USER JUAN IDENTIFIED BY "1234";
User created.

SQL> CREATE USER JOSE IDENTIFIED BY "1234";
User created.

SQL> CREATE USER JESUS IDENTIFIED BY "1234";
User created.

SQL> CREATE USER CITLALLI IDENTIFIED BY "1234";
User created.

SQL> CREATE USER TATA IDENTIFIED BY "1234";
User created.

SQL> CREATE USER SABA IDENTIFIED BY "1234";
User created.

SQL> GRANT DEV TO JUAN;
Grant succeeded.

SQL> GRANT DEV TO JOSE;
Grant succeeded.

SQL> GRANT DEV TO JESUS;
Grant succeeded.

SQL> GRANT DBA TO CITLALLI;
Grant succeeded.

SQL> GRANT EXTERNO TO TATA;
Grant succeeded.

SQL> GRANT DATASC TO SABA;
Grant succeeded.

SQL>
```

Aquí se asignamos los roles a los usuarios al departamento que corresponden

```
SQL> GRANT EXTERNO TO TATA;
Grant succeeded.
SQL> GRANT DATASC TO SABA;
Grant succeeded.
SQL> GRANT CREATE TABLE TO DEV;
Grant succeeded.

SQL> CONN JUAN
Enter password:
ERROR:
ORA-01045: user JUAN lacks CREATE SESSION privilege; logon denied

Warning: You are no longer connected to ORACLE.
SQL> GRANT CREATE SESSION TO DEV;
SP2-B640: Not connected
SQL> CONN SYS AS SYSDBA
Enter password:
ERROR:
ORA-01017: invalid username/password; logon denied

SQL> CONN SYS AS SYSDBA
Enter password:
Connected.
SQL> GRANT CREATE SESSION TO DEV;
Grant succeeded.

SQL> CONN JUAN/1234;
Connected.
SQL> CREATE TABLE EMPLEADOS
2 (
3     empleado_id NUMBER,
4     nombre VARCHAR2(50),
5     salario NUMBER
6 )
7 TABLESPACE RH;
CREATE TABLE EMPLEADOS
*
ERROR at line 1:
ORA-01950: no existen privilegios en tablespace 'RH'

SQL>
```

Aquí se asignamos los roles a los usuarios al departamento que corresponden

Le da permisos a DEV

Le da permisos a DEV para iniciar sesión.

```
SQL> GRANT UNLIMITED TABLESPACE TO dev;
Grant succeeded.

SQL> commit;
Commit complete.

SQL>
```

Le da permisos a DEV

## 5.- Crear Tablas con una cuenta de DEV

Se crean las tablas con la cuenta de dev con el usuario Juan ya que con los permisos asignados se crean correctamente.

```
SQL Plus
SQL*Plus: Release 11.2.0.1.0 Production on Mar Oct 31 14:27:55 2023
Copyright (c) 1982, 2010, Oracle. All rights reserved.
Enter user-name: juan
Enter password:
Connected to:
Oracle Database 11g Release 11.2.0.1.0 - 64bit Production

SQL> CREATE TABLE EMPLEADOS
2 (
3     empleado_id NUMBER,
4     nombre VARCHAR2(50),
5     salario NUMBER
6 )
7 TABLESPACE RH;

Table created.

SQL> CREATE TABLE PUESTOS
2 (
3     puesto_id NUMBER,
4     nombre VARCHAR2(50)
5 )
6 TABLESPACE RH;

Table created.

SQL> CREATE TABLE TURNO
2 (
3     turno_id NUMBER,
4     nombre VARCHAR2(50)
5 )
6 TABLESPACE RH;

Table created.

SQL> CREATE TABLE ARTICULO
2 (
3     articulo_id NUMBER,
4     nombre VARCHAR2(50),
5     precio NUMBER
6 )
7 TABLESPACE VENTAS;

Table created.

SQL> CREATE TABLE FACTURA
2 (
3     factura_id NUMBER,
4     fecha DATE,
5     cliente_id NUMBER
6 )
7 TABLESPACE VENTAS;
```

```
SQL Plus
SQL> CREATE TABLE TURNO
2 (
3     turno_id NUMBER,
4     nombre VARCHAR2(50)
5 )
6 TABLESPACE RH;

Table created.

SQL> CREATE TABLE ARTICULO
2 (
3     articulo_id NUMBER,
4     nombre VARCHAR2(50),
5     precio NUMBER
6 )
7 TABLESPACE VENTAS;

Table created.

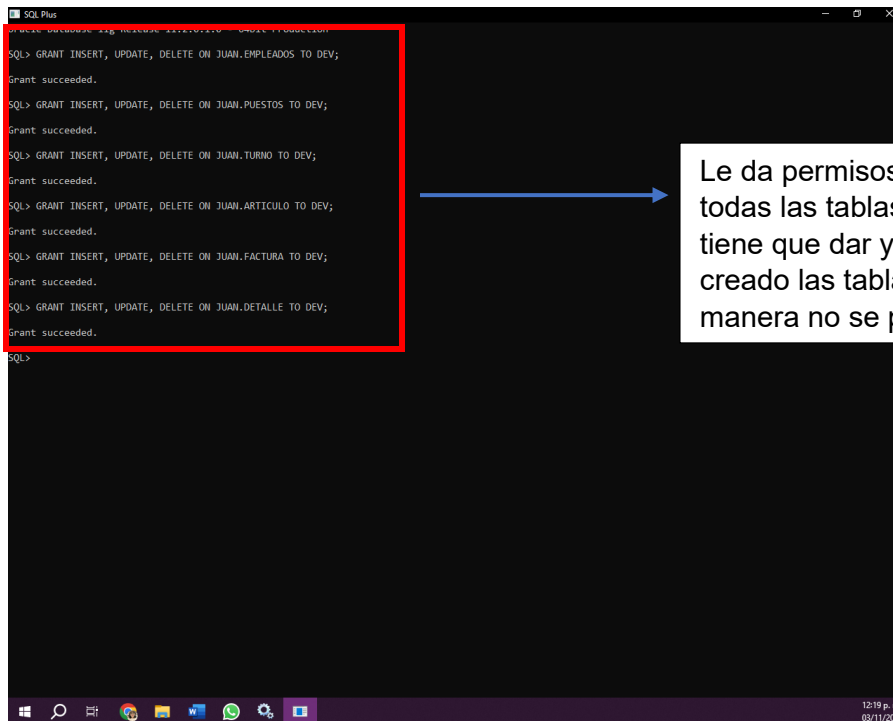
SQL> CREATE TABLE FACTURA
2 (
3     factura_id NUMBER,
4     fecha DATE,
5     cliente_id NUMBER
6 )
7 TABLESPACE VENTAS;

Table created.

SQL> CREATE TABLE DETALLE
2 (
3     detalle_id NUMBER,
4     factura_id NUMBER,
5     articulo_id NUMBER,
6     cantidad NUMBER
7 )
8 TABLESPACE VENTAS;

Table created.

SQL>
```



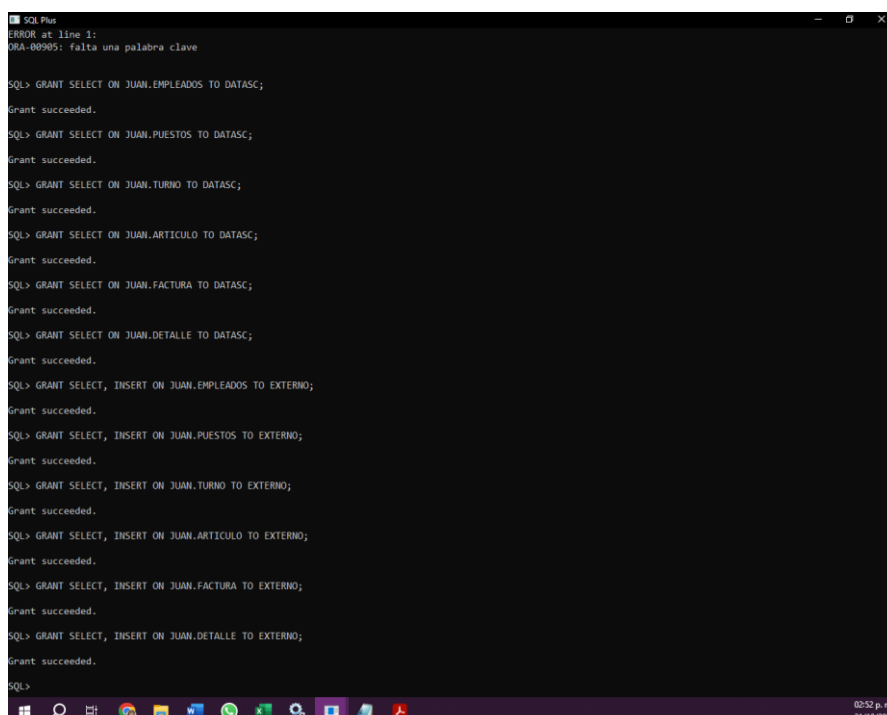
```
SQL> GRANT INSERT, UPDATE, DELETE ON JUAN.EMPLEADOS TO DEV;
Grant succeeded.
SQL> GRANT INSERT, UPDATE, DELETE ON JUAN.PUESTOS TO DEV;
Grant succeeded.
SQL> GRANT INSERT, UPDATE, DELETE ON JUAN.TURNO TO DEV;
Grant succeeded.
SQL> GRANT INSERT, UPDATE, DELETE ON JUAN.ARTICULO TO DEV;
Grant succeeded.
SQL> GRANT INSERT, UPDATE, DELETE ON JUAN.FACTURA TO DEV;
Grant succeeded.
SQL> GRANT INSERT, UPDATE, DELETE ON JUAN.DETALLE TO DEV;
Grant succeeded.
SQL>
```

A screenshot of a SQL Plus terminal window. The terminal shows a series of SQL commands granting DML permissions (INSERT, UPDATE, DELETE) to the DEV user on various tables in the JUAN schema. The commands are: GRANT INSERT, UPDATE, DELETE ON JUAN.EMPLEADOS TO DEV; GRANT INSERT, UPDATE, DELETE ON JUAN.PUESTOS TO DEV; GRANT INSERT, UPDATE, DELETE ON JUAN.TURNO TO DEV; GRANT INSERT, UPDATE, DELETE ON JUAN.ARTICULO TO DEV; GRANT INSERT, UPDATE, DELETE ON JUAN.FACTURA TO DEV; and GRANT INSERT, UPDATE, DELETE ON JUAN.DETALLE TO DEV;. Each command is followed by 'Grant succeeded.'. The terminal window has a title bar that says 'SQL Plus' and a Windows taskbar at the bottom showing the date as 09/11/2023 and time as 12:19 p.m.

Le da permisos a DEV de DML en todas las tablas, este permiso se tiene que dar ya que hayamos creado las tablas ya que de otra manera no se podía.

## 6.- Permisos EXTERNO y DATA y asignar a usuarios

Como adelantamos un paso anteriormente en que ya asignábamos los roles a los usuarios de los departamentos así que ahora solo queda darle los permisos asignados a cada uno como por ejemplo DATASC solo pueden hacer select y a externo solo pueden hacer select e inserta a las tablas (que están en el esquema de Juan).



```
SQL> GRANT SELECT ON JUAN.EMPLEADOS TO DATASC;
Grant succeeded.
SQL> GRANT SELECT ON JUAN.PUESTOS TO DATASC;
Grant succeeded.
SQL> GRANT SELECT ON JUAN.TURNO TO DATASC;
Grant succeeded.
SQL> GRANT SELECT ON JUAN.ARTICULO TO DATASC;
Grant succeeded.
SQL> GRANT SELECT ON JUAN.FACTURA TO DATASC;
Grant succeeded.
SQL> GRANT SELECT ON JUAN.DETALLE TO DATASC;
Grant succeeded.
SQL> GRANT SELECT, INSERT ON JUAN.EMPLEADOS TO EXTERNO;
Grant succeeded.
SQL> GRANT SELECT, INSERT ON JUAN.PUESTOS TO EXTERNO;
Grant succeeded.
SQL> GRANT SELECT, INSERT ON JUAN.TURNO TO EXTERNO;
Grant succeeded.
SQL> GRANT SELECT, INSERT ON JUAN.ARTICULO TO EXTERNO;
Grant succeeded.
SQL> GRANT SELECT, INSERT ON JUAN.FACTURA TO EXTERNO;
Grant succeeded.
SQL> GRANT SELECT, INSERT ON JUAN.DETALLE TO EXTERNO;
Grant succeeded.
SQL>
```

A screenshot of a SQL Plus terminal window. The terminal shows a series of SQL commands granting SELECT and INSERT permissions to DATASC and EXTERNO users on various tables in the JUAN schema. The commands are: GRANT SELECT ON JUAN.EMPLEADOS TO DATASC; GRANT SELECT ON JUAN.PUESTOS TO DATASC; GRANT SELECT ON JUAN.TURNO TO DATASC; GRANT SELECT ON JUAN.ARTICULO TO DATASC; GRANT SELECT ON JUAN.FACTURA TO DATASC; GRANT SELECT ON JUAN.DETALLE TO DATASC; GRANT SELECT, INSERT ON JUAN.EMPLEADOS TO EXTERNO; GRANT SELECT, INSERT ON JUAN.PUESTOS TO EXTERNO; GRANT SELECT, INSERT ON JUAN.TURNO TO EXTERNO; GRANT SELECT, INSERT ON JUAN.ARTICULO TO EXTERNO; GRANT SELECT, INSERT ON JUAN.FACTURA TO EXTERNO; and GRANT SELECT, INSERT ON JUAN.DETALLE TO EXTERNO;. Each command is followed by 'Grant succeeded.'. The terminal window has a title bar that says 'SQL Plus' and a Windows taskbar at the bottom showing the date as 31/10/2023 and time as 02:52 p.m.