



# Práctica 03. Creación y carga de la base de datos:

## Bases de Datos

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<b>1. Razonar el motivo de las definiciones hechas.</b>	<b>2</b>
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# 1. Razonar el motivo de las definiciones hechas.

En la creación de la tabla Departamento se pone como clave primaria el CD. A la hora de crear la tabla Área se pone CAR como clave primaria y el campo CD se indica que es una referencia a la tabla Departamento.

Durante la creación de la tabla Profesor se establece el campo DNI como clave principal y CAR como clave foránea perteneciente a la tabla Área.

En la creación de la tabla Asignatura se establece CAS como clave principal, se indica que los campos A y T no puede ser nulo, también se indica que el campo CUR coge valores entre 1 y 5, el campo CAR hace referencia a la tabla Área, y que los campos CT, CP y CL tienen por defecto el valor 0.0.

Cuando se crea la tabla Plan\_Docente, se indican las claves DNI, CAS y FI como claves principales, se establecen las clases CAS Y DNI como foráneas, pertenecientes a las tablas Asignatura y Profesor respectivamente. Y se verifica que la Fecha de Finalización (FF) es posterior a la Fecha de Inicio (FI).

## 2. Contenido del archivo de spool PRACT3.lst

```
SQL> CREATE TABLE DEPARTAMENTO
  2  (CD NUMBER(2) PRIMARY KEY,
  3  D VARCHAR2(60));
```

Table created.

```
SQL> CREATE TABLE AREA
  2  (CAR NUMBER(3) PRIMARY KEY,
  3  AR VARCHAR2(60),
  4  CD NUMBER(2) REFERENCES DEPARTAMENTO ON DELETE CASCADE);
```

Table created.

```
SQL> CREATE TABLE PROFESOR
  2  (DNI NUMBER(8) PRIMARY KEY,
  3  P VARCHAR2(60),
  4  CAR NUMBER(3),
  5  CAT VARCHAR2(5),
  6  FOREIGN KEY (CAR) REFERENCES AREA ON DELETE SET NULL);
```

Table created.



```
SQL> CREATE TABLE ASIGNATURA
  2  (CAS NUMBER(3) PRIMARY KEY,
  3  A VARCHAR2(50) NOT NULL,
  4  T CHAR(4) NOT NULL,
  5  CUR NUMBER(1) CHECK (CUR BETWEEN 1 AND 5),
  6  CAR NUMBER(3) REFERENCES AREA ON DELETE SET NULL,
  7  CT NUMBER(3,1) DEFAULT 0.0,
  8  CP NUMBER(3,1) DEFAULT 0.0,
  9  CL NUMBER(3,1) DEFAULT 0.0);
```

Table created.

```
SQL> CREATE TABLE PLAN_DOCENTE
  2  (DNI NUMBER(8),
  3  CAS NUMBER(3),
  4  CTA NUMBER(3,1) DEFAULT 0.0,
  5  CPA NUMBER(3,1) DEFAULT 0.0,
  6  CLA NUMBER(3,1) DEFAULT 0.0,
  7  FI DATE DEFAULT SYSDATE,
  8  FF DATE,
  9  PRIMARY KEY (DNI, CAS, FI),
 10  FOREIGN KEY (CAS) REFERENCES ASIGNATURA ON DELETE CASCADE,
 11  FOREIGN KEY (DNI) REFERENCES PROFESOR ON DELETE CASCADE,
 12  CONSTRAINT PD_CK1 CHECK (CTA + CPA + CLA > 0.0),
 13  CONSTRAINT PD_CK2 CHECK (FF >= FI));
```

Table created.

```
SQL> spool off
```

```
SQL> INSERT INTO DEPARTAMENTO
  2  VALUES(1,'ANALISIS MATEMATICO');
```

1 row created.

```
SQL> INSERT INTO DEPARTAMENTO
  2  VALUES(2,'ASTROFISICA');
```

1 row created.

```
SQL> INSERT INTO DEPARTAMENTO
  2  VALUES(3,'ESTADISTICA, INVESTIGACION OPERATIVA Y COMPUTACION');
```



1 row created.

```
SQL> INSERT INTO DEPARTAMENTO
      2  VALUES(4,'MATEMATICA FUNDAMENTAL');
```

1 row created.

```
SQL> INSERT INTO AREA
      2  VALUES(1,'ALGEBRA',4);
```

1 row created.

```
SQL> INSERT INTO AREA
      2  VALUES(2,'ANALISIS MATEMATICO',1);
```

1 row created.

```
SQL> INSERT INTO AREA
      2  VALUES(3,'ASTRONOMIA Y ASTROFISICA',2);
```

1 row created.

```
SQL> INSERT INTO AREA
      2  VALUES(4,'CIENCIAS DE LA COMPUTACION E INTELIGENCIA ARTIFICIAL',3);
```

1 row created.

```
SQL> INSERT INTO AREA
      2  VALUES(4,'DIDACTICA DE LA MATEMATICA',1);
```

```
INSERT INTO AREA
```

\*

ERROR at line 1:

ORA-00001: unique constraint (ALU0101364544.SYS\_C00408097) violated

```
SQL> INSERT INTO AREA
      2  VALUES(5,'DIDACTIVA DE LA MATEMATICA',1);
```

1 row created.

```
SQL> INSERT INTO AREA
      2  VALUES(6,'ESTADISTICA E INVESTIGACION OPERATIVA',3);
```



1 row created.

```
SQL> INSERT INTO AREA
      2 VALUES(7,'LENGUAJES Y SISTEMAS INFORMATICOS',3);
```

1 row created.

```
SQL> INSERT INTO AREA
      2 VALUES(8,'MATEMATICA APLICADA',1);
```

1 row created.

```
SQL> spool off
```

```
SQL> INSERT INTO PROFESOR
      2 VALUES(1111,'JUAN',6'CU');
VALUES(1111,'JUAN',6'CU')
                        *
```

ERROR at line 2:  
ORA-00917: missing comma

```
SQL> INSERT INTO PROFESOR
      2 VALUES(1111,'JUAN',6,'CU');
```

1 row created.

```
SQL> INSERT INTO PROFESOR
      2 VALUES(2222,'CARLOS',7,'TU');
```

1 row created.

```
SQL> INSERT INTO PROFESOR
      2 VALUES(3333,'PEDRO',4,'TEU');
```

1 row created.

```
SQL> INSERT INTO PROFESOR
      2 VALUES(4444,'MARIA',7,'TU');
```

1 row created.



```
SQL> INSERT INTO PROFESOR
  2  VALUES(5555,'IVAN',1,'CEU');
```

1 row created.

```
SQL> INSERT INTO PROFESOR
  2  VALUES(6666,'CARMEN',3,'CD');
```

1 row created.

```
SQL> INSERT INTO PROFESOR
  2  VALUES(7777,'MARIO',2,'TU');
```

1 row created.

```
SQL> VALUES(8888,'FRANCISCO',5,'TU');
SP2-0734: unknown command beginning "VALUES(888..." - rest of line
ignored.
```

```
SQL> INSERT INTO PROFESOR
  2  VALUES(8888,'FRANCISCO',5,'TU');
```

1 row created.

```
SQL> INSERT INTO PROFESOR
  2  VALUES(9999,'ANGELA',8,'TEU');
```

ERROR:

ORA-01756: quoted string not properly terminated

```
SQL> INSERT INTO PROFESOR
  2  VALUES(9999,'ANGELA',8,'TEU');
```

1 row created.

```
SQL> INSERT INTO PROFESOR
  2  VALUES(1010,'DAVID',4,'TU');
```

1 row created.

```
SQL> INSERT INTO PROFESOR
  2  VALUES(2020,SOLEDAD,7,'CU');
VALUES(2020,SOLEDAD,7,'CU')
```

\*



ERROR at line 2:  
ORA-00984: column not allowed here

```
SQL> INSERT INTO PROFESOR
  2  VALUES(2020,'SOLEDAD',7,'CU');
```

1 row created.

```
SQL> INSERT INTO PROFESOR
  2  VALUES(3030,'JOSE MANUEL',6,'TEU');
```

1 row created.

```
SQL> spool off
```

```
SQL> INSERT INTO ASIGNATURA
  2  VALUES(1,'BASE DE DATOS','GII',3,7,3,1.5,1.5);
```

1 row created.

```
SQL> COMMIT
  2  ;
```

Commit complete.

```
SQL> INSERT INTO ASIGNATURA
  2  VALUES(2,'INTELIGENCIA ARTIFICIAL','GII',3,4,1.5,1.5,3);
```

1 row created.

```
SQL> spool off
```

```
SQL> INSERT INTO ASIGNATURA
  2  VALUES(3,'ALMACENES DE DATOS','MII',1,7,1.5,0,1.5);
```

1 row created.

```
SQL> INSERT INTO ASIGNATURA
  2  VALUES(4,'MINERIA DE DATOS','MII',1,7,1.5,0,1.5);
```

1 row created.

```
SQL> INSERT INTO ASIGNATURA
```





```
2 VALUES(5,'INFORMATICA BASICA','GII',1,7,3,1.5,1.5);
```

1 row created.

```
SQL> INSERT INTO ASIGNATURA
```

```
2 VALUES(6,'ALGEBRA','GII',1,1,3,3,0);
```

1 row created.

```
SQL> INSERT INTO ASIGNATURA
```

```
2 VALUES(7,'CALCULO','GII',1,8,3,3,0);
```

1 row created.

```
SQL> INSERT INTO ASIGNATURA
```

```
2 VALUES(8,'OPTIMIZACION','GII',1,6,3,1.5,1.5);
```

1 row created.

```
SQL> INSERT INTO ASIGNATUA
```

```
2 VALUES(9,'GESTION DE RIESGOS','GII',3,4,3,0,3);
```

```
INSERT INTO ASIGNATUA
```

```
*
```

ERROR at line 1:

ORA-00942: table or view does not exist

```
SQL> INSERT INTO ASIGNATURA
```

```
2 VALUES(9,'GESTION DE RIESGOS','GII',3,4,3,0,3);
```

1 row created.

```
SQL> INSERT INTO ASIGNATURA
```

```
2 VALUES(10,'ASTRONOMIA','GF',2,3,3,1.5,1.5);
```

1 row created.

```
SQL> INSERT INTO ASIGNATURA
```

```
2 VALUES(11,'DIDACTICA DE LA MATEMATICA','GM',2,5,6,0,0);
```

1 row created.

```
SQL> INSERT INTO ASIGNATURA
```



```
2 VALUES(12,'ANALISIS COMPLEJO','GM',4,2,4.5,3,0);
```

1 row created.

```
SQL> spool off
```

```
SQL> INSERT INTO PLAN_DOCENTE
```

```
2 VALUES(4444, 1, 3, 1.5, 1.5, '01-SEP-11', NULL);
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
```

```
2 VALUES(4444,4,1.5,0,1.5,'01-SEP-08','31-AUG-10');
VALUES(4444,4,1.5,0,1.5,'01-SEP-08','31-AUG-10')
*
```

ERROR at line 2:

ORA-00917: missing comma

```
SQL> INSERT INTO PLAN_DOCENTE
```

```
2 VALUES(4444,4,1.5,0,1.5,'01-SEP-08','31-AUG-10');
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
```

```
2 VALUES(4444,5,3,0,0,'01-SEP-10',NULL);
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
```

```
2 VALUES(1111,8,3,1.5,1.5,'01-SEP-07','31-AUG-09');
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
```

```
2 VALUES(1111,8,3,0,0,'01-SEP-09',NULL);
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
```

```
2 VALUES(3030,8,0,1.5,1.5,'01-SEP-09',NULL);
```

1 row created.



```
SQL> INSERT INTO PLAN_DOCENTE
      2  VALUES(2222,4,1.5,0,1.5,'01-SEP-09',NULL);
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
      2  VALUES(2222,3,1.5,0,1.5,'01-SEP-06','31-AUG-07');
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
      2  VALUES(1010,2,1.5,1.5,3,'01-SEP-05','31-AUG-08');
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
      2  VALUES(3333,2,1.5,1.5,3,'01-SEP-08',NULL);
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
      2  VALUES(1010,9,3,0,3,'01-SEP-08','31-AUG-09');
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
      2  VALUES(1010,9,1.5,0,1.5,'01-SEP-09',NULL)
      3  ;
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
      2  VALUES(9999,7,3,3,0,'01-SEP-10',NULL);
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
      2  VALUES(5555,6,3,3,0,'31-MAR-10',NULL);
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
```



```
2 VALUES(6666,10,3,1.5,1.5,'01-SEP-08','31-AUG-11');
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
2 VALUES(8888,11,6,0,0,'01-SEP-09',NULL)
3 ;
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
2 VALUES(2020,3,1.5,0,1.5,'01-SEP-08',NULL);
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
2 VALUES(7777,12,4.5,3,0,'01-SEP-10',NULL);
```

1 row created.

```
SQL> INSERT INTO PLAN_DOCENTE
2 VALUES(3333,9,1.5,0,1.5,'01-SEP-09',NULL);
```

1 row created.

```
SQL> spool off
```

```
SQL> select cd, d from departamento;
```

```
      CD D
-----
1 ANALISIS MATEMATICO
2 ASTROFISICA
3 ESTADISTICA, INVESTIGACION OPERATIVA Y COMPUTACION
4 MATEMATICA FUNDAMENTAL
```

```
SQL> select * from area;
```

```
      CAR AR
-----
      CD
-----
1 ALGEBRA
4
```



2 ANALISIS MATEMATICO

1

3 ASTRONOMIA Y ASTROFISICA

2

CAR AR

-----  
CD

-----  
4 CIENCIAS DE LA COMPUTACION E INTELIGENCIA ARTIFICIAL

3

5 DIDACTICA DE LA MATEMATICA

1

6 ESTADISTICA E INVESTIGACION OPERATIVA

3

CAR AR

-----  
CD

-----  
7 LENGUAJES Y SISTEMAS INFORMATICOS

3

8 MATEMATICA APLICADA

1

8 rows selected.

SQL> select \* from profesor;

DNI P

-----  
CAR CAT

-----  
1111 JUAN

6 CU



2222 CARLOS  
7 TU

3333 PEDRO  
4 TEU

DNI P

---

CAR CAT

---

4444 MARIA  
7 TU

5555 IVAN  
1 CEU

6666 CARMEN  
3 CD

DNI P

---

CAR CAT

---

7777 MARIO  
2 TU

8888 FRANCISCO  
5 TU

9999 ANGELA  
8 TEU

DNI P

---

CAR CAT

---

1010 DAVID  
4 TU



2020 SOLEDAD  
7 CU

3030 JOSE MANUEL  
6 TEU

12 rows selected.

SQL> select \* from asignatura;

	CAS	A		T
CUR				
	CAR	CT	CP	CL
	1 BASES DE DATOS			GII
3	7	3	1.5	1.5
	2 INTELIGENCIA ARTIFICIAL			GII
3	4	1.5	1.5	3
	3 ALMACENES DE DATOS			MII
1	7	1.5	0	1.5

	CAS	A		T
CUR				
	CAR	CT	CP	CL
	4 MINERIA DE DATOS			MII
1	7	1.5	0	1.5
	5 INFORMATICA BASICA			GII
1	7	3	1.5	1.5



1	6 ALGEBRA				GII
	1	3	3	0	
CUR	CAS A				T
	-----				
	CAR	CT	CP	CL	
1	7 CALCULO				GII
	8	3	3	0	
1	8 OPTIMIZACION				GII
	6	3	1.5	1.5	
3	9 GESTION DE RIESGOS				GII
	4	3	0	3	
CUR	CAS A				T
	-----				
	CAR	CT	CP	CL	
2	10 ASTRONOMIA				GF
	3	3	1.5	1.5	
2	11 DIDACTICA DE LA MATEMATICA				GM
	5	6	0	0	
4	12 ANALISIS COMPLEJO				GM
	2	4.5	3	0	





12 rows selected.

```
SQL> select * from plan_docente;
```

DNI	CAS	CTA	CPA	CLA FI	FF
4444	1	3	1.5	1.5 01-SEP-11	
4444	4	1.5	0	1.5 01-SEP-08	31-AUG-10
4444	5	3	0	0 01-SEP-10	
1111	8	3	1.5	1.5 01-SEP-07	31-AUG-09
1111	8	3	0	0 01-SEP-09	
3030	8	0	1.5	1.5 01-SEP-09	
2222	4	1.5	0	1.5 01-SEP-09	
2222	3	1.5	0	1.5 01-SEP-06	31-AUG-07
1010	2	1.5	1.5	3 01-SEP-05	31-AUG-08
3333	2	1.5	1.5	3 01-SEP-08	
1010	9	3	0	3 01-SEP-08	31-AUG-09

DNI	CAS	CTA	CPA	CLA FI	FF
1010	9	1.5	0	1.5 01-SEP-09	
9999	7	3	3	0 01-SEP-10	
5555	6	3	3	0 31-MAR-10	
6666	10	3	1.5	1.5 01-SEP-08	31-AUG-11
8888	11	6	0	0 01-SEP-09	
2020	3	1.5	0	1.5 01-SEP-08	
7777	12	4.5	3	0 01-SEP-10	
3333	9	1.5	0	1.5 01-SEP-09	

19 rows selected.

```
SQL> spool off
```