

DATABASE SYSTEMS COURSE 2021/2022

SESSION 13

SESSION 13

- **NOT NULL CONSTRAINT**
- UNIQUE CONSTRAINT
- DEFAULT CLAUSE
- GENERATED ALWAYS AS CLAUSE
- GENERATED ALWAYS AS IDENTITY CLAUSE (ORACLE)
- CHECK CONSTRAINTS

NOT NULL CONSTRAINT

NOT NULL Constraint Example

MySQL

```
CREATE TABLE t_flightticket (  
  idticket INTEGER NOT NULL,  
  idflight INTEGER NOT NULL,  
  company VARCHAR(50));
```

Oracle

```
CREATE TABLE t_flightticket (  
  idticket NUMBER NOT NULL,  
  idflight NUMBER NOT NULL,  
  company VARCHAR2(50));
```

MySQL/Oracle

```
INSERT INTO t_flightticket VALUES (1, NULL, 'Air France');
```



MySQL Database Error

Column 'idflight' cannot be null

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UNIQUE CONSTRAINT

UNIQUE Constraint Example

MySQL

```
CREATE TABLE t_flightticket (  
  idticket INTEGER NOT NULL UNIQUE,  
  idflight INTEGER NOT NULL,  
  company VARCHAR(50));
```

Oracle

```
CREATE TABLE t_flightticket (  
  idticket NUMBER NOT NULL UNIQUE,  
  idflight NUMBER NOT NULL,  
  company VARCHAR2(50));
```

MySQL/Oracle

```
INSERT INTO t_flightticket(idticket,idflight,company) VALUES (1, 443, 'Air France');  
INSERT INTO t_flightticket(idticket,idflight,company) VALUES (1, 444, 'Lufthansa');
```



MySQL Database Error

Duplicate entry '1' for key 't_flightticket.idticket'

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DEFAULT CLAUSE

DEFAULT Example

MySQL

```
CREATE TABLE t_flightticket (  
  idticket INTEGER NOT NULL,  
  idflight INTEGER NOT NULL,  
  company VARCHAR(50),  
  flighttype VARCHAR(50) DEFAULT 'Comercial');
```

Oracle

```
CREATE TABLE t_flightticket (  
  idticket NUMBER NOT NULL,  
  idflight NUMBER NOT NULL,  
  company VARCHAR2(50),  
  flighttype VARCHAR2(50) DEFAULT 'Comercial');
```

MySQL/Oracle

```
INSERT INTO t_flightticket (idticket,idflight,company) VALUES (1, 442, 'Air France');
```

idticket *	idflight *	company	flighttype
1	442	Air France	Comercial

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GENERATED ALWAYS AS CLAUSE

GENERATED ALWAYS AS Example

MySQL

```
CREATE TABLE t_flightticket (  
  idticket INTEGER NOT NULL,  
  idflight INTEGER NOT NULL,  
  company VARCHAR(50),  
  flighttype VARCHAR(50) DEFAULT 'Comercial',  
  price INTEGER,  
  reducedprice DOUBLE GENERATED ALWAYS AS  
    (price*0.9));
```

Oracle

```
CREATE TABLE t_flightticket (  
  idticket NUMBER NOT NULL,  
  idflight NUMBER NOT NULL,  
  company VARCHAR2(50),  
  flighttype VARCHAR2(50) DEFAULT 'Comercial',  
  price NUMBER,  
  reducedprice NUMBER GENERATED ALWAYS AS  
    (price*0.9));
```

MySQL/Oracle

```
INSERT INTO t_flightticket (idticket,idflight,company,price) VALUES (1,443,'Air France',500);
```

idticket *	idflight *	company	flighttype	price	reducedprice
1	443	Air France	Comercial	500	450

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GENERATED ALWAYS AS IDENTITY (ORACLE)

GENERATED ALWAYS AS IDENTITY Example

Oracle

```
CREATE TABLE t_flightticket (
  idticket NUMBER GENERATED ALWAYS AS IDENTITY,
  idflight NUMBER NOT NULL,
  company VARCHAR2 (50),
  flighttype VARCHAR2 (50) DEFAULT 'Comercial',
  price NUMBER,
  reducedprice NUMBER GENERATED ALWAYS AS (price*0.9));
```

Oracle

```
INSERT INTO t_flightticket (idticket,idflight,company,price) VALUES (1,443,'Air France',500);
```

```
Error SQL: ORA-32795: no se puede insertar una columna de identidad siempre generada
32795.0000 - "cannot insert into a generated always identity column"
```

Oracle

```
INSERT INTO t_flightticket (idflight,company,price) VALUES (443, 'Air France',500);
```

IDTICKET	IDFLIGHT	COMPANY	FLIGHTTYPE	PRICE	REDUCEDPRICE
1	443	Air France	Comercial	500	450

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- **CHECK CONSTRAINTS**

CHECK CONSTRAINTS

CHECK Constraint Example

MySQL

```
CREATE TABLE t_flightticket (
  idticket INTEGER NOT NULL PRIMARY KEY
  AUTO_INCREMENT,
  idflight INTEGER NOT NULL,
  company VARCHAR(50),
  flighttype VARCHAR(50) DEFAULT
  'Comercial',
  price INTEGER,
  reducedprice DOUBLE GENERATED ALWAYS AS
  (price*0.9),
  hour INTEGER CONSTRAINT chk_hour CHECK
  (hour<24));
```

Oracle

```
CREATE TABLE t_flightticket (
  idticket NUMBER GENERATED ALWAYS AS
  IDENTITY,
  idflight NUMBER NOT NULL,
  company VARCHAR2(50),
  flighttype VARCHAR2(50) DEFAULT
  'Comercial',
  price NUMBER,
  reducedprice NUMBER GENERATED ALWAYS AS
  (price*0.9),
  hour NUMBER CONSTRAINT chk_hour CHECK
  (hour<24));
```

MySQL

```
INSERT INTO t_flightticket(idflight,company,price,hour) VALUES (443,'Air France',500,25);
```



MySQL Database Error

Check constraint 'chk_hour' is violated.