

10. ALTER TABLE

ALTER TABLE statement

© Janusz R. Getta

CSCI235/MCS9235 Databases, SCSSE, Spring 2009

1

10. ALTER TABLE

Functionality

ALTER TABLE statement permanently changes a definition of relational table

ALTER TABLE statement can be used to:

- add, drop a column,
- add, modify a type of column,
- enable, disable, add, drop, modify a consistency constraint,
- rename a relational table,
- modify the storage characteristics of relational table

© Janusz R. Getta

CSCI235/MCS9235 Databases, SCSSE, Spring 2009

2

10. ALTER TABLE

Adding the attributes

```
CREATE TABLE Department (
  name          VARCHAR2(50),
  code          CHAR(5),
  total_staff_number NUMBER(2)          NOT NULL,
  chair         VARCHAR2(50),
  budget        NUMBER(9,1)            NULL,
  CONSTRAINT dept_pkey PRIMARY KEY(name),
  CONSTRAINT dept_ckey1 UNIQUE(code),
  CONSTRAINT dept_ckey2 UNIQUE(chair),
  CONSTRAINT dept_check1
  CHECK (total_staff_number BETWEEN 1 AND 50) );
```

```
ALTER TABLE Department
  ADD (category VARCHAR2(20) );
```

```
ALTER TABLE Department
  ADD (location VARCHAR2(20),
       vision_stmt CLOB );
```

© Janusz R. Getta

CSCI235/MCS9235 Databases, SCSSE, Spring 2009

3

10. ALTER TABLE

Dropping an attribute

```
CREATE TABLE Department (
  name          VARCHAR2(50),
  code          CHAR(5),
  total_staff_number NUMBER(2)          NOT NULL,
  chair         VARCHAR2(50),
  budget        NUMBER(9,1)            NULL,
  CONSTRAINT dept_pkey PRIMARY KEY(name),
  CONSTRAINT dept_ckey1 UNIQUE(code),
  CONSTRAINT dept_ckey2 UNIQUE(chair),
  CONSTRAINT dept_check1
  CHECK (total_staff_number BETWEEN 1 AND 50) );
```

```
ALTER TABLE Department
  DROP (budget) CASCADE CONSTRAINTS;
```

© Janusz R. Getta

CSCI235/MCS9235 Databases, SCSSE, Spring 2009

4

10. ALTER TABLE

Changing a type of attribute

```
CREATE TABLE Department (
  name          VARCHAR2(50),
  code          CHAR(5),
  total_staff_number NUMBER(2)          NOT NULL,
  chair         VARCHAR2(50),
  budget        NUMBER(9,1)            NULL,
  CONSTRAINT dept_pkey PRIMARY KEY(name),
  CONSTRAINT dept_ckey1 UNIQUE(code),
  CONSTRAINT dept_ckey2 UNIQUE(chair),
  CONSTRAINT dept_check1
  CHECK (total_staff_number BETWEEN 1 AND 50) );
```

```
ALTER TABLE Department
  MODIFY (code CHAR(6) NOT NULL);
```

```
ALTER TABLE Department
  MODIFY (chair VARCHAR2(80));
```

© Janusz R. Getta

CSCI235/MCS9235 Databases, SCSSE, Spring 2009

5

10. ALTER TABLE

Adding a constraint

```
CREATE TABLE Department (
  name          VARCHAR2(50),
  code          CHAR(5),
  total_staff_number NUMBER(2)          NOT NULL,
  chair         VARCHAR2(50),
  budget        NUMBER(9,1)            NULL,
  CONSTRAINT dept_pkey PRIMARY KEY(name),
  CONSTRAINT dept_ckey1 UNIQUE(code),
  CONSTRAINT dept_ckey2 UNIQUE(chair),
  CONSTRAINT dept_check1
  CHECK (total_staff_number BETWEEN 1 AND 50) );
```

```
ALTER TABLE Department
  ADD CONSTRAINT dept_check2
  CHECK (code = UPPER(code));
```

© Janusz R. Getta

CSCI235/MCS9235 Databases, SCSSE, Spring 2009

6

10. ALTER TABLE

Dropping a constraint

```
CREATE TABLE Department (
  name          VARCHAR2(50),
  code          CHAR(5),
  total_staff_number NUMBER(2)          NOT NULL,
  chair         VARCHAR2(50),
  budget        NUMBER(9,1)             NULL,
  CONSTRAINT dept_pkey PRIMARY KEY(name),
  CONSTRAINT dept_ckey1 UNIQUE(code),
  CONSTRAINT dept_ckey2 UNIQUE(chair),
  CONSTRAINT dept_check1
  CHECK (total_staff_number BETWEEN 1 AND 50) );
```

```
ALTER TABLE Department
  DROP CONSTRAINT dept_check1;
```

10. ALTER TABLE

Changing a constraint

```
CREATE TABLE Department (
  name          VARCHAR2(50),
  code          CHAR(5),
  total_staff_number NUMBER(2)          NOT NULL,
  chair         VARCHAR2(50),
  budget        NUMBER(9,1)             NULL,
  CONSTRAINT dept_pkey PRIMARY KEY(name),
  CONSTRAINT dept_ckey1 UNIQUE(code),
  CONSTRAINT dept_ckey2 UNIQUE(chair),
  CONSTRAINT dept_check1
  CHECK (total_staff_number BETWEEN 1 AND 50) );
```

```
ALTER TABLE Department
  MODIFY CONSTRAINT dept_check1
  CHECK (total_staff_number BETWEEN 1 AND 100);
```

```
ALTER TABLE Department
  DROP CONSTRAINT dept_check1;
```

```
ALTER TABLE Department
  ADD CONSTRAINT dept_check1
  CHECK (total_staff_number BETWEEN 1 AND 100);
```

10. ALTER TABLE

Dropping and cascading a constraint

```
CREATE TABLE Department (
  name          VARCHAR2(50),
  code          CHAR(5),
  total_staff_number NUMBER(2)          NOT NULL,
  chair         VARCHAR2(50),
  budget        NUMBER(9,1)             NULL,
  CONSTRAINT dept_pkey PRIMARY KEY(name),
  CONSTRAINT dept_ckey1 UNIQUE(code),
  CONSTRAINT dept_ckey2 UNIQUE(chair),
  CONSTRAINT dept_check1
  CHECK (total_staff_number BETWEEN 1 AND 50) );
```

```
ALTER TABLE Department
  DROP CONSTRAINT dept_pkey CASCADE;
```

```
ALTER TABLE Department
  DROP PRIMARY KEY CASCADE;
```

```
ALTER TABLE Department
  DROP UNIQUE (chair);
```

10. ALTER TABLE

Disabling and enabling a constraint

```
CREATE TABLE Department (
  name          VARCHAR2(50),
  code          CHAR(5),
  total_staff_number NUMBER(2)          NOT NULL,
  chair         VARCHAR2(50),
  budget        NUMBER(9,1)             NULL,
  CONSTRAINT dept_pkey PRIMARY KEY(name),
  CONSTRAINT dept_ckey1 UNIQUE(code),
  CONSTRAINT dept_ckey2 UNIQUE(chair),
  CONSTRAINT dept_check1
  CHECK (total_staff_number BETWEEN 1 AND 50) );
```

```
ALTER TABLE Department
  DISABLE CONSTRAINT dept_check1;
```

```
ALTER TABLE Department
  ENABLE CONSTRAINT dept_check1;
```

10. ALTER TABLE

Renaming a relational table

```
CREATE TABLE Department (
  name          VARCHAR2(50),
  code          CHAR(5),
  total_staff_number NUMBER(2)          NOT NULL,
  chair         VARCHAR2(50),
  budget        NUMBER(9,1)             NULL,
  CONSTRAINT dept_pkey PRIMARY KEY(name),
  CONSTRAINT dept_ckey1 UNIQUE(code),
  CONSTRAINT dept_ckey2 UNIQUE(chair),
  CONSTRAINT dept_check1
  CHECK (total_staff_number BETWEEN 1 AND 50) );
```

```
ALTER TABLE Department
  RENAME TO NewDepartment;
```

10. ALTER TABLE

References

<https://sai.uow.edu.au/oradocs/>
SQL Reference, **ALTER TABLE** statement