DELETE
TRUNCATE TABLE
statements

Functionality

`DELETE` statement deletes all rows that satisfy a given condition

The rows deleted by `DELETE` statement **CAN** be restored by `ROLLBACK` statement unless `DELETE` has been committed by `COMMIT` statement

`DELETE` statement DOES NOT delete a table

`DELETE` statement DOES NOT release disk storage occupied by the deleted rows

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Sample database

```
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)  );
```

```
CREATE TABLE Course(
c#              CHAR(7),
title           VARCHAR2(200)        NOT NULL,
credits         NUMBER(1)            NOT NULL,
offered_by      VARCHAR2(50)         NULL,
CONSTRAINT course_pkey PRIMARY KEY(c#),
CONSTRAINT course_check1
          CHECK (credits IN (6, 12) ),
CONSTRAINT course_fkey1 FOREIGN KEY(offered_by)
          REFERENCES Department(name) );
```

Examples

```
DELETE FROM Course
WHERE c# = 'CSCI235';
```

```
DELETE FROM Course
WHERE (credits = 12) OR
      (UPPER(title) LIKE '%DATABASE%');
```

```
DELETE FROM Department
WHERE total_staff_number < 5;
```

```
DELETE FROM Department;
```

Computational model (`DELETE`)

```
DELETE FROM <TABLE>
WHERE <CONDITION>;
```

```
forall rows t in <TABLE>
   if evaluate(<CONDITION>, t) then
      delete t from <TABLE>;
   endif;
endforall;
```

```
DELETE FROM COURSE
WHERE credits = 12;
```

```
forall rows c in COURSE
   if c.credits = 12 then
      delete c from COURSE;
   endif;
endforall;
```

Keywords

```
DELETE FROM Course
WHERE c# = 'CSCI235';

DELETE FROM Course
WHERE (credits = 12) OR
   (UPPER(title) LIKE '%DATABASE%');

DELETE FROM Department
WHERE total_staff_number < 5;

DELETE FROM Department;
```

Table name

```
DELETE FROM Course
WHERE c# = 'CSCI235';

DELETE FROM Course
WHERE (credits = 12) OR
  (UPPER(title) LIKE '%DATABASE%');

DELETE FROM Department
WHERE total_staff_number < 5;

DELETE FROM Department;
```

Condition

```
DELETE FROM Course
WHERE c# = 'CSCI235';

DELETE FROM Course
WHERE (credits = 12) OR
  (UPPER(title) LIKE '%DATABASE%');

DELETE FROM Department
WHERE total_staff_number < 5;

DELETE FROM Department;
```

BEWARE !!!

```
DELETE FROM Department WHERE code='CSCI';

ERROR at line 1:
ORA-02292: integrity constraint
(SCOTT.COURSE_FKEY1) violated – child record
found
```

**IF ON DELETE CASCADE CLAUSE IS NOT USED
IN A SPECIFICATION OF FOREIGN KEY
THEN AN ORDER IN WHICH THE ROWS ARE
DELETED IS IMPORTANT !!!**

Functionality

TRUNCATE statement deletes all rows from a given relational table

The rows deleted by TRUNCATE statement CANNOT be restored by ROLLBACK statement

TRUNCATE statement DOES NOT delete a table

TRUNCATE statement releases all disk storage occupied by the deleted rows

Examples

```
TRUNCATE TABLE Course;
```
```
TRUNCATE TABLE Department;
```

References

Elmasri R., Navathe S. B., *Database Systems*, chapter 4.4

**https://sai.uow.edu.au/oradocs/
SQL Reference, DELETE statement**

**https://sai.uow.edu.au/oradocs/
SQL Reference, TRUNCATE TABLE statement**