INSERT
statement

Functionality

INSERT statement inserts a new row into a relational table and automatically verifies the consistency constraints

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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

```
INSERT INTO Department VALUES
('Computer Science','CSCI',30,'Peter',123456.9 );

INSERT INTO Course VALUES
('CSCI235', 'Databases', 6, 'Computer Science');

INSERT INTO Department
(name,code,chair,budget,total_staff_number) VALUES
('Mathematics','MATH','James',NULL,10);

INSERT INTO Course
(c#,title,offered_by,credits) VALUES
('MATH345','Topology','Mathematics',6);
```

Keywords

```
INSERT INTO Department VALUES
('Computer Science','CSCI',30,'Peter',123456.9 );

INSERT INTO Course VALUES
('CSCI235','Databases',6,'Computer Science');

INSERT INTO Department
(name,code,chair,budget,total_staff_number)
VALUES('Mathematics','MATH','James',NULL,10);

INSERT INTO Course
(c#,title,offered_by,credits)
VALUES('MATH345','Topology,'Mathematics',6);
```

Table names

```
INSERT INTO Department VALUES
('Computer Science','CSCI',30,'Peter',123456.9 );

INSERT INTO Course VALUES
('CSCI235','Databases',6,'Computer Science');

INSERT INTO Department
(name,code,chair,budget,total_staff_number)
VALUES('Mathematics','MATH','James',NULL,10);

INSERT INTO Course
(c#,title,offered_by,credits)
VALUES('MATH345','Topology,'Mathematics',6);
```

1

Rows

```
INSERT INTO Department VALUES
('Computer Science','CSCI',30,'Peter',123456.9 );

INSERT INTO Course VALUES
('CSCI235','Databases',6,'Computer Science');

INSERT INTO Department
(name,code,chair,budget,total_staff_number)
VALUES('Mathematics','MATH','James',NULL,10);

INSERT INTO Course
(c#,title,offered_by,credits)
VALUES('MATH345','Topology,'Mathematics',6);
```

Attribute names

```
INSERT INTO Department VALUES
('Computer Science','CSCI',30,'Peter',123456.9 );

INSERT INTO Course VALUES
('CSCI235','Databases',6,'Computer Science');

INSERT INTO Department
(name,code,chair,budget,total_staff_number)
VALUES('Mathematics','MATH','James',NULL,10);

INSERT INTO Course
(c#,title,offered_by,credits)
VALUES('MATH345','Topology,'Mathematics',6);
```

BEWARE !!!

```
INSERT INTO Course VALUES
('PHYS1234','Relativity Theory',6,'Physics');

ERROR at line 1:
ORA-02291: integrity constraint
(SCOTT.COURSE_FKEY1) violated – parent key not
found
```

AN ORDER IN WHICH THE ROWS ARE INSERTED IS IMPORTANT !!!

References

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

Ramakrishnan R., Gehrke J., *Database Management Systems*, chapter 3.3

```
https://sai.uow.edu.au/oradocs/
```
SQL Reference, INSERT statement