

CSCI 275 – Oracle Table Creation

CREATE TABLE command:

```
CREATE TABLE TableName (  
    { colName dataType [ NOT NULL ] [ UNIQUE ]  
      [ DEFAULT defaultOption ]  
      [ CHECK (searchCondition) ]  
      [ GENERATED [ ALWAYS | BY DEFAULT [ ON NULL ] ]  
      AS IDENTITY  
      [ START WITH initialValue ] [ INCREMENT BY val ]  
    }  
    [ , ... ] }  
    [ PRIMARY KEY (listOfColumns),  
    { [ UNIQUE (listOfColumns), [ ..., ] }  
    { [ FOREIGN KEY (listOfFKColumns)  
      REFERENCES ParentTableName [(listOfCKColumns)],  
      [ ON DELETE CASCADE ]  
      ] [, ... ] }  
    { [ CHECK (searchCondition) ] [, ... ] }  
);
```

Common Data Types:

CHAR(size)	Fixed-length character data (default size is 1)
VARCHAR2(size)	Variable-length character data
NUMBER(len, dec)	Fixed-point or floating-point numbers, where len is number of digits, dec is number of decimal digits
DATE	Dates in the form '20-Feb-2007' (CURRENT_DATE. returns today's date)

ALTER TABLE command:

```
ALTER TABLE TableName  
    [ ADD      columnName  dataType  [options]  
    [ MODIFY  columnName  dataType  [options]  
    [ DROP    columnName  [RESTRICT | CASCADE ]  
    [ RENAME  columnName  TO  NewColumnName ]  
    [ ADD    [ CONSTRAINT [ConstraintName] ] tableConstraintDefinition ]  
    [ DROP   CONSTRAINT  ConstraintName [ RESTRICT | CASCADE ] ]
```

DROP TABLE command:

```
DROP TABLE TableName [RESTRICT | CASCADE]
```

Entity Integrity:

Primary Key:

```
CREATE TABLE t (  
  p NUMBER PRIMARY KEY  
);
```

```
CREATE TABLE t (  
  p NUMBER,  
  PRIMARY KEY (p)  
);
```

```
CREATE TABLE t (  
  p NUMBER,  
  q NUMBER,  
  PRIMARY KEY (p, q)  
);
```

```
ALTER TABLE t  
DROP PRIMARY KEY;
```

```
ALTER TABLE t  
ADD PRIMARY KEY (p, q);
```

```
CREATE TABLE t (  
  p NUMBER,  
  q NUMBER,  
  CONSTRAINT c PRIMARY KEY (p, q)  
);
```

```
ALTER TABLE t DROP CONSTRAINT c;
```

```
ALTER TABLE t  
ADD CONSTRAINT c PRIMARY KEY (p, q);
```

Alternate Key:

Use UNIQUE in place of PRIMARY KEY

Required Data:

Use NOT NULL in column definition

Referential Integrity:

Foreign Key:

```
CREATE TABLE t2 (  
  r NUMBER REFERENCES t(p)  
);
```

```
CREATE TABLE t2 (  
  r NUMBER,  
  FOREIGN KEY (r) REFERENCES t(p)  
);
```

```
CREATE TABLE t2 (  
  r NUMBER,  
  CONSTRAINT c FOREIGN KEY (r)  
  REFERENCES t(p)  
);
```

```
ALTER TABLE t2  
ADD FOREIGN KEY (r) REFERENCES t(p);
```

```
ALTER TABLE t2  
ADD FOREIGN KEY (r) REFERENCES t(p)  
ON DELETE CASCADE;
```

Domain Constraints:

```
CREATE TABLE t (  
  grade CHAR CHECK (grade in ('A','B','C','D','F')),  
);
```

```
CREATE TABLE t (  
  grade CHAR NOT NULL,  
  number_grade NUMBER(2) NOT NULL,  
  CONSTRAINT valid_letter_grade  
  CHECK (grade in ('A','B','C','D','F')),  
  CONSTRAINT valid_number_grade  
  CHECK (number_grade > 0)  
);
```