CREATE-DROP scripts

COMS10012 Software Tools

CREATE

SQL

```
CREATE TABLE <tablename> (
    <column-def>
    [, <column-def>] ...
    [, <constraint-def>] ...
);
```

SQL

```
<column-def> ::= <name> <type>
                 [DEFAULT <value>]
                 [<column-constraint>]
```

SQL

```
<type> ::= INT[EGER][(n)] | VARCHAR(n)
          | CHAR(n) | BIGINT | REAL
          | DATE | TIME | DATETIME
          | BOOLEAN | BLOB | TEXT
```

The exact list depends on your database.

SQL

```
<column-constraint> ::=
    [[NOT] NULL]
    | PRIMARY KEY
    | UNIQUE
    | REFERENCES <table>(<col>)
```

MySQL/MariaDB ignore column-level foreign keys, so they are forbidden in this unit.

SQL example

```
CREATE TABLE Volunteer (
    id INTEGER PRIMARY KEY,
    name VARCHAR(100) NOT NULL,
    car BOOLEAN
);
```

Table-level constraints

```
<constraint> ::= [CONSTRAINT <name>] <cdef>

<cdef> ::=
    PRIMARY KEY (<col>[,<col>...])
  | UNIQUE (<col>[,<col>...])
  | FOREIGN KEY (<col>[,<col>...])
    REFERENCES <table> (<col>[,<col>...])
  | CHECK <expression>
```

SQL example

```
CREATE TABLE VGroup (
  id INTEGER PRIMARY KEY,
  name VARCHAR(20) UNIQUE NOT NULL
);

CREATE TABLE Volunteer (
  id INTEGER PRIMARY KEY,
  name VARCHAR(100) NOT NULL,
  vgroup INTEGER NULL,
  CONSTRAINT group_membership
    FOREIGN KEY (vgroup) REFERENCES VGroup(id)
);
```

SQL Example

-- Volunteer, Client already created

```
CREATE TABLE Task (
  volunteer     INTEGER NOT NULL,
  client        INTEGER NOT NULL,
  performed_at DATE    NOT NULL,
  PRIMARY KEY (volunteer, client, performed_at),
  FOREIGN KEY volunteer REFERENCES Volunteer(id),
  FOREIGN KEY client REFERENCES Client(id)
);
```

Autoincrement

```
CREATE TABLE Volunteer (
  id INTEGER PRIMARY KEY AUTO_INCREMENT,
  ...
);
```

DROP

DROP

```sql
DROP TABLE [IF EXISTS] <name>;
```

Create-drop script

```
DROP TABLE IF EXISTS Volunteer;

DROP TABLE IF EXISTS VGroup;


CREATE TABLE VGroup ( ... );

CREATE TABLE Volunteer (

  ...

  FOREIGN KEY vgroup REFERENCES VGroup(id)

);
```

Alter

```
ALTER TABLE <table>
  ADD | MODIFY | DROP
  COLUMN | CONSTRAINT
  <name> [<new-def>];
```