SQL-constraints

Primarykey and unique

```
CREATE TABLE Student (
        SNAME                   VARCHAR(10)     NOT NULL,
        Rollno          INTEGER                 NOT NULL,
        Admno                   CHAR(9)         NOT NULL,
        classname       CHAR(9),
        age             integer,
        PRIMARY KEY (Admno),
        UNIQUE (Rollno));
```

Foreign key and referential integrity constraint

```
CREATE TABLE Student (
        SNAME                           VARCHAR(10)  NOT NULL,
        Rollno          INTEGER                 NOT NULL,
        Admno           CHAR(9)         NOT NULL,
        classname       CHAR(9),
        age             integer,

        PRIMARY KEY (Admno),
        UNIQUE (Rollno),
        FOREIGN KEY(classname) referenes CLASS);
```

Foreign key and referential integrity constraint

- A referential integrity constraint can be violated when tuples are inserted or deleted, or when a foreign key or primary key attribute value is modified
- The schema designer can specify an alternative action to be taken by attaching a referential triggered action clause to any foreign key constraint.
- The options include:
- SET NULL,
- CASCADE, and
- SET DEFAULT.

An option must be qualified with either

- ON DELETE or
- ON UPDATE

Foreign key and referential integrity constraint

```
CREATE TABLE Student (
        SNAME                   VARCHAR(10)     NOT NULL,
        Rollno          INTEGER         NOT NULL,
        Admno           CHAR(9) NOT NULL,
        classname       CHAR(9),
        age             integer,
        PRIMARY KEY (Admno),
        UNIQUE (Rollno),
        FOREIGN KEY(classname) referenes CLASS)
      constraint leader_student
        FOREIGN KEY(leaderid) references student(admnno) ON DELETE SET NULL ON UPDATE
CASCADE);
```

Foreign key and referential integrity constraint

```
CREATE TABLE Student (
        SNAME                   VARCHAR(10)     NOT NULL,
        Rollno          INTEGER         NOT NULL,
        Admno           CHAR(9)  NOT NULL,
        classname       CHAR(9),
        age             integer,
        PRIMARY KEY (Admno),
        UNIQUE (Rollno),
      CONSTRAINT CLASS_FK
        FOREIGN KEY(classname) references CLASS(CLASSID)        ON DELETE SET DEFAULT UPDATE
CASCADE
      constraint leader_student
        FOREIGN KEY(leaderid) references student(admnno) ON DELETE SET NULL ON UPDATE CASCADE);
```

- CREATE TABLE CLASS(

 CLASSNAME VARCHAR (20),

CLASSID VARCHAR(5) NOT NULL DEFAULT CS));

Each constraint is specified by a unique name.

Specifying Constraints on Tuples Using CHECK

- CHECK clauses is specified at the end of a CREATE TABLE statement
- These can be called tuple-based constraints because they apply to each tuple individually and are checked whenever a tuple is inserted or modified

Primarykey and unique

```
CREATE TABLE Student (
        SNAME                   VARCHAR(10)NOT NULL,
        Rollno      INTEGER             NOT NULL,
        Admno               CHAR(9)     NOT NULL,
        classname   CHAR(9),
        age         integer,
        check (age>=17)
        PRIMARY KEY (Admno),
        UNIQUE (Rollno));
```