5) Specification of database in SQL

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-- Create Table: Student
CREATE TABLE student (
   studentid SERIAL PRIMARY KEY,
   firstname VARCHAR(50) NOT NULL,
   lastname VARCHAR(50) NOT NULL,
   dateofbirth DATE NOT NULL,
   email VARCHAR(100),
   work VARCHAR(255),
   level VARCHAR(50) NOT NULL
);

-- Create Table: Professor
CREATE TABLE professor (
   professorid SERIAL PRIMARY KEY,
   firstname VARCHAR(50) NOT NULL,
   lastname VARCHAR(50) NOT NULL,
   email VARCHAR(100),
   department VARCHAR(100),
   affiliation VARCHAR(100)
);

-- Create Table: Subject
CREATE TABLE subject (
   subjectid SERIAL PRIMARY KEY,
   subjectname VARCHAR(50) NOT NULL
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```
);

-- Create Table: Exam
CREATE TABLE exam (
   examid SERIAL PRIMARY KEY,
   examdate DATE NOT NULL,
   professorid INTEGER,
   subjectid INTEGER,
   classroomid INTEGER,
   FOREIGN KEY (professorid) REFERENCES professor(professorid),
   FOREIGN KEY (subjectid) REFERENCES subject(subjectid),
   FOREIGN KEY (classroomid) REFERENCES classroom(classroomid)
);

-- Create Table: Classroom
CREATE TABLE classroom (
   classroomid SERIAL PRIMARY KEY,
   roomnr VARCHAR(10) NOT NULL,
   building VARCHAR(50) NOT NULL,
   capacity INTEGER NOT NULL CHECK (capacity >= 0)
);

-- Create Table: Takes
CREATE TABLE takes (
   studentid INTEGER,
   examid INTEGER,
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  PRIMARY KEY (studentid, examid),
  FOREIGN KEY (studentid) REFERENCES student(studentid),
  FOREIGN KEY (examid) REFERENCES exam(examid)
);

-- Create Table: Covers
CREATE TABLE covers (
  examid INTEGER,
  subjectid INTEGER,
  PRIMARY KEY (examid, subjectid),
  FOREIGN KEY (examid) REFERENCES exam(examid),
  FOREIGN KEY (subjectid) REFERENCES subject(subjectid)
);

-- Create Table: HeldIn
CREATE TABLE heldin (
  examid INTEGER,
  classroomid INTEGER,
  PRIMARY KEY (examid, classroomid),
  FOREIGN KEY (examid) REFERENCES exam(examid),
  FOREIGN KEY (classroomid) REFERENCES classroom(classroomid)
);

-- Create Table: Hosts
CREATE TABLE hosts (
  classroomid INTEGER,
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    subjectid INTEGER,
    PRIMARY KEY (classroomid, subjectid),
    FOREIGN KEY (classroomid) REFERENCES classroom(classroomid),
    FOREIGN KEY (subjectid) REFERENCES subject(subjectid)
);

-- Create Table: TaughtBy
CREATE TABLE taughtby (
    subjectid INTEGER,
    professorid INTEGER,
    PRIMARY KEY (subjectid, professorid),
    FOREIGN KEY (subjectid) REFERENCES subject(subjectid),
    FOREIGN KEY (professorid) REFERENCES professor(professorid)
);

-- Create Table: Mentors
CREATE TABLE mentors (
    professorid INTEGER,
    studentid INTEGER,
    PRIMARY KEY (professorid, studentid),
    FOREIGN KEY (professorid) REFERENCES professor(professorid),
    FOREIGN KEY (studentid) REFERENCES student(studentid)
);
```