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Database Management

Lab 4

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### Check Constraints

Check constraints are constraints that check for certain values. It works very similarly to a filter, allowing only specific values or values with specific properties through into the database. They are very good for ensuring the validity and a solid structure of a database. For example, when creating a table for students, the set up would typically look like this:

```
CREATE TABLE students(  
  sid var-char(255),  
  LastName varchar(255),  
  FirstName varchar(255),  
  Address varchar(255),  
  City varchar(255)  
)
```

Firstly, our table is not strong due to its nulibility. If all fields can have a null object inserted into them, there could be thousands of blank entries in the database. In order to prevent this, we must create a 'soft' constraint as follows:

```
CREATE TABLE students(  
  sid var-char(255) NOT NULL,  
  LastName varchar(255) NOT NULL,  
  FirstName varchar(255),  
  Address varchar(255),  
  City varchar(255)  
)
```

Now we need to add a 'hard' constraint- CHECK. Check will now make sure one of our keys (typically the primary key) meets a certain criteria.

```
CREATE TABLE students(  
  sid var-char(255) NOT NULL,  
  LastName varchar(255) NOT NULL,  
  FirstName varchar(255),  
  Address varchar(255),  
  City varchar(255),  
  CHECK (sid >001)  
)
```

This would now make sure that not only will the student ID not be empty, but it will be the second, third or any other student ID number other than 1.

However, with a bad check constraint, you could do something like:

```
CREATE TABLE students(  
  sid var-char(255) NOT NULL,  
  LastName varchar(255) NOT NULL,  
  FirstName varchar(255),  
  Address varchar(255),  
  City varchar(255),  
  CHECK (LastName = 'Stevens' )  
)
```

This would be inadvisable because it is impossible to know what is within the database; check constraints can be very helpful but only if used efficiently.