

Answers to Module 3 Problems

The CREATE TABLE statement solution uses standard SQL data types. NOT NULL constraints are not necessary for primary key columns as a primary key constraint implies nulls not allowed.

Oracle and PostgreSQL

1.

```
CREATE TABLE Customer
(CustNo VARCHAR(8),
 CustName VARCHAR(30) CONSTRAINT CustNameNotNull NOT NULL,
 Address VARCHAR(50) CONSTRAINT AddressNotNull NOT NULL,
 Internal CHAR(1) CONSTRAINT InternalNotNull NOT NULL,
 Contact VARCHAR(35) CONSTRAINT ContractNotNull NOT NULL,
 Phone VARCHAR(11) CONSTRAINT CPhoneNotNull NOT NULL,
 City VARCHAR(30) CONSTRAINT CityNotNull NOT NULL,
 State VARCHAR(2) CONSTRAINT StateNotNull NOT NULL,
 Zip VARCHAR(10) CONSTRAINT zipNotNull NOT NULL,
 CONSTRAINT PK_CUSTOMER PRIMARY KEY (CustNo) );
```

2.

Oracle and PostgreSQL

```
CREATE TABLE Facility
(FacNo VARCHAR(8),
 FacName VARCHAR(30) CONSTRAINT FacNameNotNull NOT NULL,
 CONSTRAINT PK_FACILITY PRIMARY KEY (FacNo) );
```

3.

Oracle and PostgreSQL

```
CREATE TABLE Location
(LocNo VARCHAR(8),
 FacNo VARCHAR(8),
 LocName VARCHAR(30) CONSTRAINT LocNameNotNull NOT NULL,
 CONSTRAINT PK_LOCATION PRIMARY KEY (LocNo);
```

4.

There is one 1-M relationships: Facility (FacNo PK) – Location (FacNo FK).

5.

The CREATE TABLE statement has been extended with foreign keys for *FacNo*.

Oracle and PostgreSQL

```
CREATE TABLE Location
(LocNo VARCHAR(8),
 FacNo VARCHAR(8),
 LocName VARCHAR(30) CONSTRAINT LocNameNotNull NOT NULL,
 CONSTRAINT PK_LOCATION PRIMARY KEY (LocNo),
 CONSTRAINT FK_FACNO FOREIGN KEY (FacNo)
 REFERENCES FACILITY (FacNo) );
```

6.

Null values are not allowed for *FacNo*. The sample rows show that each facility has a related location. In addition, common practice indicates that a location requires a facility. The CREATE TABLE statement has been extended with a NOT NULL constraint.

Oracle and PostgreSQL

```
CREATE TABLE Location
(LocNo VARCHAR(8),
 FacNo VARCHAR(8) CONSTRAINT FacNoFKNotNull NOT NULL,
 LocName VARCHAR(30) CONSTRAINT LocNameNotNull NOT NULL,
 CONSTRAINT PK_LOCATION PRIMARY KEY (LocNo),
 CONSTRAINT FK_FACNO FOREIGN KEY (FacNo)
 REFERENCES FACILITY (FacNo) );
```

7.

Oracle and PostgreSQL

```
CREATE TABLE Facility
(FacNo VARCHAR(8),
 FacName VARCHAR(30) CONSTRAINT FacNameNotNull NOT NULL,
 CONSTRAINT PK_FACILITY PRIMARY KEY (FacNo)
 CONSTRAINT Unique_FacName UNIQUE(FacName) );
```