

```
CREATE TABLE residentialComplexBuilding (  
  complexId int not null identity primary key,  
  complexName VARCHAR(50) not null,  
  complexAddress VARCHAR(150) not null,  
  complexPhoneNumber CHAR(10) not null)
```

Discussion:

There are no repeated values in this table. The attributes complexId, complexName, complexAddress and complexPhoneNumber are all native to the table, with complexId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes serve to describe the primary key complexId, which identifies the table. All attributes serve to uniquely identify each instance of the entity (with there being only one instance of this entity). Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on complexId with complexId being the surrogate primary key (part of the super key).

```
CREATE TABLE recreationLounge (  
  recLoungeId int not null identity primary key,  
  recLoungeName VARCHAR(50) not null,  
  recLoungePhoneNumber CHAR(10) not null,  
  complexId int not null foreign key references residentialComplexBuilding(complexId))
```

Discussion:

There are no repeated values in this table other than the surrogate foreign key complexId. The attributes recLoungeId, recLoungeName and recLoungePhoneNumber are all native to the table, with recLoungeId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes excluding the foreign key complexId serve to describe the primary key recLoungeId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on complexId, (excluding the foreign key), with recLoungeId being the surrogate primary key (part of the super key).

```
CREATE TABLE workAndComputerCenter (  
workCompId int not null identity primary key,  
workCompName VARCHAR(50) not null,  
workCompPhoneNumber CHAR(10) not null,  
complexId int not null foreign key references residentialComplexBuilding(complexId))
```

Discussion:

There are no repeated values in this table other than the surrogate foreign key complexId. The attributes workCompId, workCompName and workCompPhoneNumber are all native to the table, with workCompId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes excluding the foreign key complexId serve to describe the primary key workCompId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on complexId, (excluding the foreign key), with workCompId being the surrogate primary key (part of the super key).

```
CREATE TABLE exerciseRoom (  
exerciseRoomId int not null identity primary key,  
exerciseRoomName VARCHAR(50) not null,  
exerciseRoomPhoneNumber CHAR(10) not null,  
complexId int not null foreign key references residentialComplexBuilding(complexId))
```

Discussion:

There are no repeated values in this table other than the surrogate foreign key complexId. The attributes exerciseRoomId, exerciseRoomName and exerciseRoomPhoneNumber are all native to the table, with exerciseRoomId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes excluding the foreign key complexId serve to describe the primary key exerciseRoomId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on complexId, (excluding the foreign key), with exerciseRoomId being the surrogate primary key (part of the super key).

```
CREATE TABLE dayCare (  
  dayCareId int not null identity primary key,  
  dayCareName VARCHAR(50) not null,  
  dayCarePhoneNumber CHAR(10) not null,  
  complexId int not null foreign key references residentialComplexBuilding(complexId))
```

Discussion:

There are no repeated values in this table other than the surrogate foreign key complexId. The attributes dayCareId, dayCareName and dayCarePhoneNumber are all native to the table, with dayCareId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes excluding the foreign key complexId serve to describe the primary key dayCareId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on dayCareId, (excluding the foreign key), with dayCareId being the surrogate primary key (part of the super key).

```
CREATE TABLE parkingArea (  
  parkingAreaId int not null identity primary key,  
  parkingAreaName VARCHAR(50) not null,  
  parkingAreaPhoneNumber CHAR(10) not null,  
  complexId int not null foreign key references residentialComplexBuilding(complexId))
```

Discussion:

There are no repeated values in this table other than the surrogate foreign key complexId. The attributes parkingAreaId, parkingAreaName and parkingAreaPhoneNumber are all native to the table, with parkingAreaId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes excluding the foreign key complexId serve to describe the primary key parkingAreaId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on parkingAreaId, (excluding the foreign key), with parkingAreaId being the surrogate primary key (part of the super key).

```
CREATE TABLE snackBar (  
  snackBarId int not null identity primary key,  
  snackBarName VARCHAR(50) not null,  
  snackBarPhoneNumber CHAR(10) not null,  
  complexId int not null foreign key references residentialComplexBuilding(complexId))
```

Discussion:

There are no repeated values in this table other than the surrogate foreign key complexId. The attributes snackBarId, snackBarName and snackBarPhoneNumber are all native to the table, with snackBarId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes excluding the foreign key complexId serve to describe the primary key snackBarId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on snackBarId, (excluding the foreign key), with snackBarId being the surrogate primary key (part of the super key).

```
CREATE TABLE pool (  
  poolId int not null identity primary key,  
  poolName VARCHAR(50) not null,  
  poolPhoneNumber CHAR(10) not null,  
  snackBarId int not null foreign key references snackBar(snackBarId),  
  complexId int not null foreign key references residentialComplexBuilding(complexId))
```

Discussion:

There are no repeated values in this table other than the surrogate foreign keys snackBarId and complexId. The attributes poolId, poolName and poolPhoneNumber are all native to the table, with poolId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes excluding the foreign keys serve to describe the primary key poolId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on poolId, (excluding the foreign keys), with poolId being the surrogate primary key (part of the super key).

```
CREATE TABLE playground (  
  playgroundId int not null identity primary key,  
  playgroundName VARCHAR(50) not null,  
  playgroundPhoneNumber CHAR(10) not null,  
  complexId int not null foreign key references residentialComplexBuilding(complexId))
```

Discussion:

There are no repeated values in this table other than the surrogate foreign key complexId. The attributes playgroundId, playgroundName and playgroundPhoneNumber are all native to the table, with playgroundId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes excluding the foreign key serve to describe the primary key playgroundId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on playgroundId, (excluding the foreign key), with playgroundId being the surrogate primary key (part of the super key).

```
CREATE TABLE restaurant (  
  restaurantId int not null identity primary key,  
  restaurantName VARCHAR(50) not null,  
  restaurantPhoneNumber CHAR(10) not null,  
  complexId int not null foreign key references residentialComplexBuilding(complexId))
```

Discussion:

There are no repeated values in this table other than the surrogate foreign key complexId. The attributes restaurantId, restaurantName and restaurantPhoneNumber are all native to the table, with restaurantId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes excluding the foreign key serve to describe the primary key restaurantId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on restaurantId, (excluding the foreign key), with restaurantId being the surrogate primary key (part of the super key).

```
CREATE TABLE familyUnit (  
  familyUnitId int not null identity primary key,  
  numberOfMembers TINYINT not null,  
  complexId int not null foreign key references residentialComplexBuilding(complexId))
```

Discussion:

There are no repeated values in this table other than the surrogate foreign key complexId. The attributes familyUnitId and numberOfMembers are all native to the table, with familyUnitId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes excluding the foreign key serve to describe the primary key familyUnitId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on familyUnitId, (excluding the foreign key), with familyUnitId being the surrogate primary key (part of the super key).

```
CREATE TABLE floor (  
  floorId int not null identity primary key,  
  floorNumber CHAR(1) not null,  
  familyUnitId int not null foreign key references familyUnit(familyUnitId),  
  complexId int not null foreign key references residentialComplexBuilding(complexId))
```

Discussion:

There are no repeated values in this table other than the surrogate foreign keys. The attributes floorId and floorNumber are all native to the table, with floorId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes excluding the foreign keys serve to describe the primary key floorId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on floorId, (excluding the foreign keys), with floorId being the surrogate primary key (part of the super key).

```
CREATE TABLE room (  
  roomId int not null identity primary key,  
  roomNumber VARCHAR(3) not null,  
  roomPhoneNumber CHAR(10) not null,  
  familyUnitId int not null foreign key references familyUnit(familyUnitId),  
  floorId int not null foreign key references floor(floorId),  
  complexId int not null foreign key references residentialComplexBuilding(complexId))
```

Discussion:

There are no repeated values in this table other than the surrogate foreign keys. The attributes roomId, roomNumber and roomPhoneNumber are all native to the table, with roomId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes excluding the foreign keys serve to describe the primary key roomId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on roomId, (excluding the foreign keys), with roomId being the surrogate primary key (part of the super key).

```
CREATE TABLE resident (  
  residentId int not null identity primary key,  
  firstName VARCHAR(30) not null,  
  middleInitial CHAR(1) null,  
  lastName VARCHAR (50) not null,  
  dateOfBirth DATETIME not null,  
  isEmployed BIT not null,  
  familyUnitId int not null foreign key references familyUnit(familyUnitId),  
  floorId int not null foreign key references resident(residentId),  
  roomId int not null foreign key references room(roomId),  
  dayCareId int not null foreign key references dayCare(dayCareId),  
  snackBarId int not null foreign key references snackBar(snackBarId),  
  poolId int not null foreign key references pool(poolId),  
  restaurantId int not null foreign key references restaurant(restaurantId),  
  complexId int not null foreign key references residentialComplexBuilding(complexId))
```

Discussion:

There are no repeated values in this table other than the surrogate foreign keys. The attributes residentId, firstName, middleInitial, lastName, dateOfBirth and isEmployed are all native to the table, with residentId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes excluding the foreign keys serve to describe the primary key residentId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on residentId, (excluding the foreign keys), with residentId being the surrogate primary key (part of the super key).

```
CREATE TABLE residentPhoneNumber (  
  residentPhoneNumberId int not null identity primary key,  
  phoneNumber CHAR(10) not null,  
  residentId int not null foreign key references resident(residentId))
```

Discussion:

There are no repeated values in this table other than the surrogate foreign keys. The attributes residentPhoneNumberId and phoneNumber are all native to the table, with residentPhoneNumberId being the surrogate primary key of the table. This table was created to rectify the problem with the phoneNumber attribute in the resident table being subject to change and not in first normal form. This fix, however, makes this table meet first normal form.

In this table, all non-primary key attributes excluding the foreign key serve to describe the primary key residentPhoneNumberId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on residentPhoneNumberId, (excluding the foreign key), with residentPhoneNumberId being the surrogate primary key (part of the super key).


```
CREATE TABLE buildingManager (  
  managerId int not null identity primary key,  
  firstName VARCHAR(30) not null,  
  middleInitial CHAR(1) null,  
  lastName VARCHAR(50) not null,  
  dateOfBirth DATETIME not null,  
  buildingManagerPhoneNumber CHAR(10) not null,  
  complexId int not null foreign key references residentialComplexBuilding(complexId))
```

Discussion:

There are no repeated values in this table other than the surrogate foreign key. The attributes managerId, firstName, middleInitial, lastName, dateOfBirth and buildingManagerPhoneNumber are all native to the table, with managerId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes excluding the foreign key serve to describe the primary key managerId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on managerId, (excluding the foreign key), with managerId being the surrogate primary key (part of the super key).

```
CREATE TABLE employee (  
  employeeId int not null identity primary key,  
  firstName VARCHAR(30) not null,  
  middleInitial CHAR(1) null,  
  lastName VARCHAR(50) not null,  
  dateOfBirth DATETIME not null,  
  employeePhoneNumber CHAR(10) not null,  
  recLoungeId int not null foreign key references recreationLounge(recLoungeId),  
  workCompId int not null foreign key references workAndComputerCenter(workCompId),  
  exerciseRoomId int not null foreign key references exerciseRoom(exerciseRoomId),  
  parkingAreaId int not null foreign key references parkingArea(parkingAreaId),  
  dayCareId int not null foreign key references dayCare(dayCareId),  
  snackBarId int not null foreign key references snackBar(snackBarId),  
  poolId int not null foreign key references pool(poolId),  
  restaurantId int not null foreign key references restaurant(restaurantId),  
  managerId int not null foreign key references buildingManager(managerId),  
  complexId int not null foreign key references residentialComplexBuilding(complexId))
```

Discussion:

There are no repeated values in this table other than the surrogate foreign keys. The attributes employeeId, firstName, middleInitial, lastName, dateOfBirth and employeePhoneNumber are all native to the table, with employeeId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes excluding the foreign keys serve to describe the primary key employeeId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on employeeId, (excluding the foreign keys), with employeeId being the surrogate primary key (part of the super key).

```
CREATE TABLE residentRecreationLounge (  
  residentRecreationLoungeId int not null identity primary key,  
  residentId int not null foreign key references resident(residentId),  
  recLoungeId int not null foreign key references recreationLounge(recLoungeId))
```

Discussion:

FIX: This table was created as an intersection table between the resident and recreationLounge tables, as they have a many to many relationship.

There are no repeated values in this table other than the surrogate foreign keys. The attribute residentRecreationLoungeId is the surrogate primary key of the table. This table meets first normal form.

In this table, there are no non-primary keys excluding the foreign keys. The only other attribute is the residentRecreationLoungeId which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as there are no non-primary key attributes (excluding the foreign keys), with residentRecreationLoungeId being the surrogate primary key (part of the super key).

```
CREATE TABLE residentWorkAndComputerCenter (  
  residentWorkAndComputerCenterId int not null identity primary key,  
  residentId int not null foreign key references resident(residentId),  
  workCompId int not null foreign key references workAndComputerCenter(workCompId))
```

Discussion:

FIX: This table was created as an intersection table between the resident and WorkAndComputerCenter tables, as they have a many to many relationship.

There are no repeated values in this table other than the surrogate foreign keys. The attribute residentWorkAndComputerCenterId is the surrogate primary key of the table. This table meets first normal form.

In this table, there are no non-primary keys excluding the foreign keys. The only other attribute is the residentWorkAndComputerCenterId which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as there are no non-primary key attributes (excluding the foreign keys), with residentWorkAndComputerCenterId being the surrogate primary key (part of the super key).

```
CREATE TABLE residentExerciseRoom (  
  residentExerciseRoomId int not null identity primary key,  
  residentId int not null foreign key references resident(residentId),  
  exerciseRoomId int not null foreign key references exerciseRoom(exerciseRoomId))
```

Discussion:

FIX: This table was created as an intersection table between the resident and exerciseRoom tables, as they have a many to many relationship.

There are no repeated values in this table other than the surrogate foreign keys. The attribute residentExerciseRoomId is the surrogate primary key of the table. This table meets first normal form.

In this table, there are no non-primary keys excluding the foreign keys. The only other attribute is the residentExerciseRoomId which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as there are no non-primary key attributes (excluding the foreign keys), with residentExerciseRoomId being the surrogate primary key (part of the super key).

```
CREATE TABLE residentParkingArea (  
  residentParkingAreaId int not null identity primary key,  
  residentId int not null foreign key references resident(residentId),  
  parkingAreaId int not null foreign key references parkingArea(parkingAreaId))
```

Discussion:

FIX: This table was created as an intersection table between the resident and parkingArea tables, as they have a many to many relationship.

There are no repeated values in this table other than the surrogate foreign keys. The attribute residentParkingAreaId is the surrogate primary key of the table. This table meets first normal form.

In this table, there are no non-primary keys excluding the foreign keys. The only other attribute is the residentParkingAreaId which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as there are no non-primary key attributes (excluding the foreign keys), with residentParkingAreaId being the surrogate primary key (part of the super key).

```
CREATE TABLE facilityCheckIn (  
  facilityCheckInId int not null identity primary key,  
  residentId int not null foreign key references resident(residentId),  
  recLoungeId int not null foreign key references recreationLounge(recLoungeId),  
  workCompId int not null foreign key references workAndComputerCenter(workCompId),  
  exerciseRoomId int not null foreign key references exerciseRoom(exerciseRoomId),  
  parkingAreaId int not null foreign key references parkingArea(parkingAreaId),  
  dayCareId int not null foreign key references dayCare(dayCareId),  
  snackBarId int not null foreign key references snackBar(snackBarId),  
  poolId int not null foreign key references pool(poolId),  
  playgroundId int not null foreign key references playground(playgroundId),  
  restaurantId int not null foreign key references restaurant(restaurantId),  
  complexId int not null foreign key references residentialComplexBuilding(complexId),  
  arrival DATETIME not null,  
  departure DATETIME null)
```

Discussion:

FIX: This table was created as a table to keep track of resident entities who use facility entities in the residential complex building such as the exercise room, the recreation lounge, the pool, the playground, the snack bar, etc.

There are no repeated values in this table other than the surrogate foreign keys. The attributes facilityCheckInId, arrival and departure are all native to the table, with facilityCheckInId being the surrogate primary key of the table. This table meets first normal form.

In this table, all non-primary key attributes excluding the foreign keys serve to describe the primary key facilityCheckInId, which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as the non-primary key attributes depend on facilityCheckInId, (excluding the foreign keys), with facilityCheckInId being the surrogate primary key (part of the super key).

```
CREATE TABLE residentEmployee (  
  residentEmployeeId int not null identity primary key,  
  residentId int not null foreign key references resident(residentId),  
  employeeId int not null foreign key references employee(employeeId))
```

FIX: This table was created as an intersection table between the resident and employee tables, as they have a many to many relationship.

There are no repeated values in this table other than the surrogate foreign keys. The attribute residentEmployeeId is the surrogate primary key of the table. This table meets first normal form.

In this table, there are no non-primary keys excluding the foreign keys. The only other attribute is the residentEmployeeId which identifies the table. All attributes serve to uniquely identify each instance of the entity. Therefore, there is no repetition and this table meets second normal form.

This table meets 3rd normal form, since none of the attributes have transitive dependencies.

The table meets Boyce-Codd Normal form, as there are no non-primary key attributes (excluding the foreign keys), with residentEmployeeId being the surrogate primary key (part of the super key).