NORMALIZATION

**Relation name: Hotel Room Management**

All attributes: ROOM\_NO (pk), ROOM\_TYPE, ROOM\_PRICE, BOOKING\_STATUS, CHECK\_IN\_DATE, CHECK\_OUT\_DATE.

1NF: No multivalued attributes.

2NF: CHECK\_IN\_DATE and CHECK\_OUT\_DATE are partially dependent on ROOM\_NO, BOOKING\_STATUS because they depend only on a specific booking of a room. So, we can create a new table to normalize.

Room: ROOM\_NO (pk), ROOM\_TYPE, ROOM\_PRICE.

Booking: BOOKING\_ID (pk), ROOM\_NO (fk), BOOKING\_STATUS.

Booking\_Details: BOOKING\_ID (pk, fk), CHECK\_IN\_DATE, CHECK\_OUT\_DATE.

3NF: No transitive dependencies here.

So, we obtain from Hotel Room Management,

Room: ROOM\_NO (pk), ROOM\_TYPE, ROOM\_PRICE.

Booking: BOOKING\_ID (pk), ROOM\_NO (fk), BOOKING\_STATUS.

Booking\_Details: BOOKING\_ID (pk, fk), CHECK\_IN\_DATE, CHECK\_OUT\_DATE.

**Relation name: Hotel Employee Management**

All attributes: EMPLOYEE\_ID (pk), EMPLOYEE\_FIRST\_NAME, EMPLOYEE\_LAST\_NAME, EMPLOYEE\_EMAIL, EMPLOYEE\_PHONE, DEPARTMENT\_NAME, POSITION\_NAME, SHIFT\_NAME

1NF: No multivalued attributes.

2NF: DEPARTMENT\_NAME and POSITION\_NAME are dependent only on EMPLOYEE\_ID, so we can create a new table to normalize.

Employee: EMPLOYEE\_ID (pk), EMPLOYEE\_FIRST\_NAME, EMPLOYEE\_LAST\_NAME, EMPLOYEE\_EMAIL, EMPLOYEE\_PHONE

Position: POSITION\_NAME (pk), DEPARTMENT\_NAME (fk)

Shift: SHIFT\_NAME (pk)

Employee\_Position: EMPLOYEE\_ID (fk), POSITION\_NAME (fk)

Employee\_Shift: EMPLOYEE\_ID (fk), SHIFT\_NAME (fk)

3NF: No transitive dependencies here.

So, we obtain from Hotel Employee Management:

Employee: EMPLOYEE\_ID (pk), EMPLOYEE\_FIRST\_NAME, EMPLOYEE\_LAST\_NAME, EMPLOYEE\_EMAIL, EMPLOYEE\_PHONE

Position: POSITION\_NAME (pk), DEPARTMENT\_NAME (fk)

Shift: SHIFT\_NAME (pk)

Employee\_Position: EMPLOYEE\_ID (fk), POSITION\_NAME (fk)

Employee\_Shift: EMPLOYEE\_ID (fk), SHIFT\_NAME (fk)

**Relation name: Order Management**

All attributes: ORDER\_ID (pk), ITEM\_ID (pk, fk), MENU\_NAME, ITEM\_DESCRIPTION, ITEM\_PRICE, ITEM\_QUANTITY.

1NF: No multivalued attributes.

2NF: MENU\_NAME, ITEM\_DESCRIPTION, ITEM\_PRICE are dependent only on ITEM\_ID, so we can create a new table to normalize.

Menu: ITEM\_ID (pk), MENU\_NAME, ITEM\_DESCRIPTION, ITEM\_PRICE.

Order\_Item: ORDER\_ID (pk), ITEM\_ID (pk, fk), ITEM\_QUANTITY.

3NF: No transitive dependencies here.

So, we obtain from Order:

Menu: ITEM\_ID (pk), MENU\_NAME, ITEM\_DESCRIPTION, ITEM\_PRICE.

Order\_Item: ORDER\_ID (pk), ITEM\_ID (pk, fk), ITEM\_QUANTITY.