# Normalization

**First Normal Form (1NF):**

- All tables are in 1NF since every row is unique and no column in any row contains multiple values.

**Second Normal Form (2NF):**

- Tables Payment, Appointment, Patient, Room Type, Prescription, Doctor, Rank, Department, and Nurse are in 2NF since they don't have composite primary keys. As a result, partial functional dependencies don't exist.
- Tables Patient Phone, Patient Email, Distribution, Room, and Attends are in 2NF since partial functional dependencies don't exist. Even though they have composite primary keys, no other column exist in these tables other than the primary keys which means that no column is partially functionally dependent on any of the components of the primary key. That's why partial functional dependencies don't exist.

**Third Normal Form (3NF):**

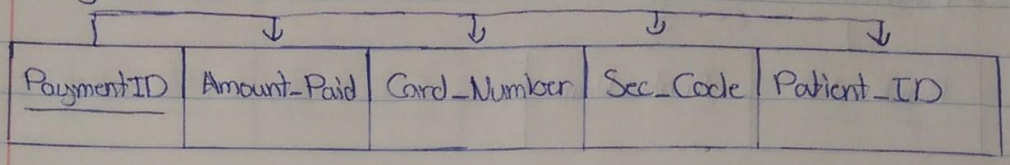
- All tables are in 3NF because there are no transitive functional dependencies.

**Boyce Code Normal Form (BCNF):**

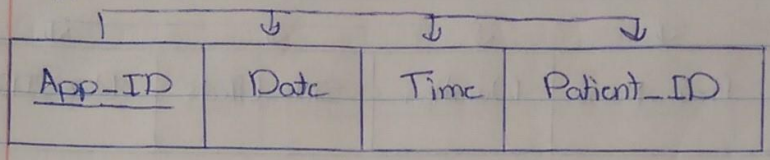
- All tables are in BCNF because they don't contain functional dependencies other than full key functional dependencies.

**Note:** The following images show the normalization process at the final result. Since tables were normalized after their creation, there were no other steps to show for the normalization process.

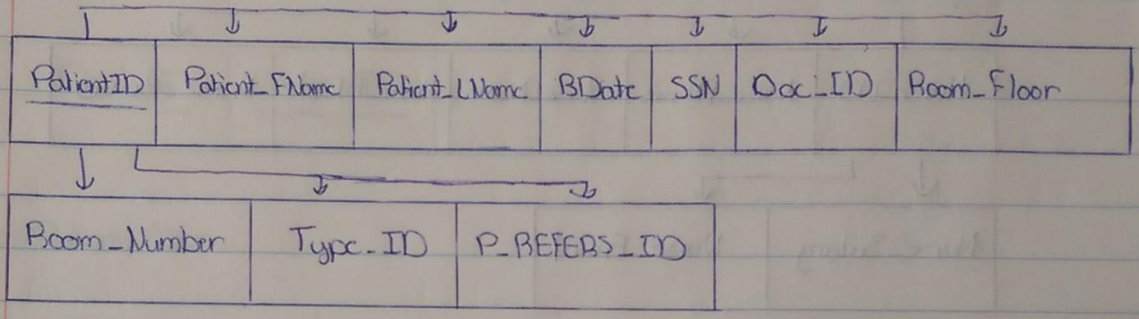
* Payment:



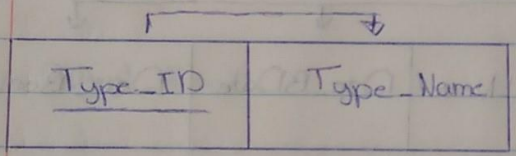

* Appointment:



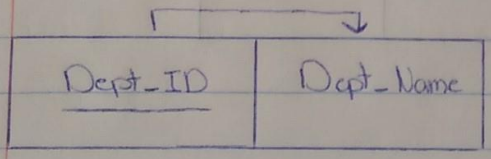

* Patient



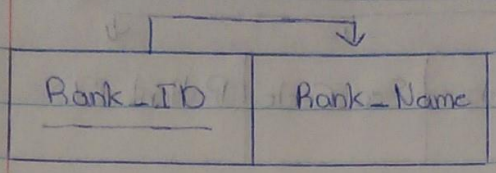

* Room Type



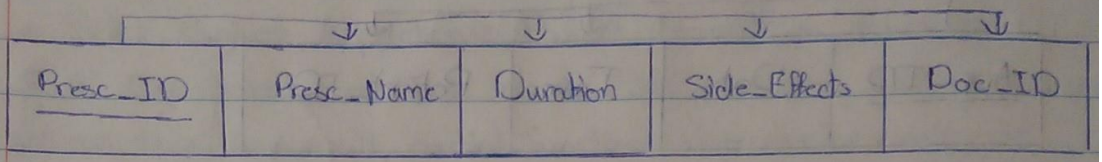

* Department



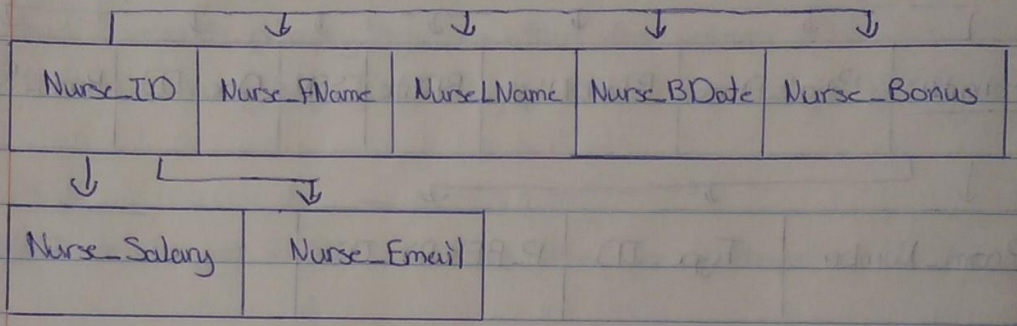
* Position



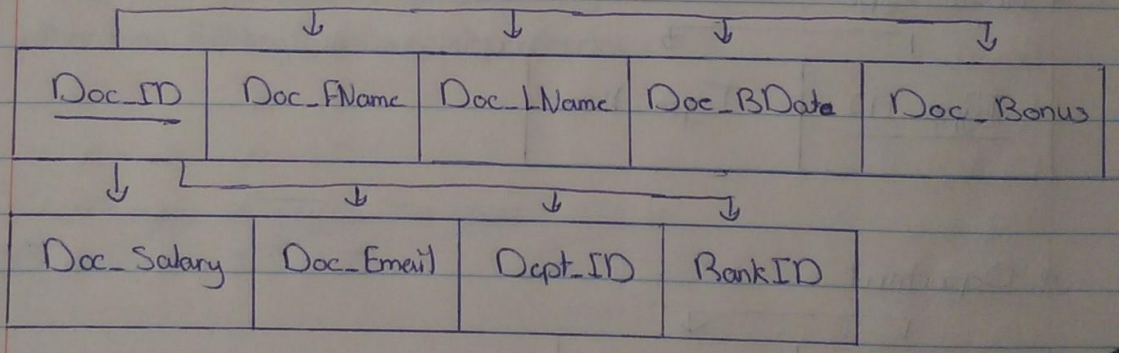

* Prescription




* Nurse




* Doctor



* Distribution

| Patient_ID | Presc_ID |
|---|---|

* Room

| Room_Floor | Room_Number | Type_ID |
|---|---|---|

* Attends

| Dept_ID | Nurse_ID |
|---|---|

* Patient_Phone

| Patient_Phone | Patient_ID |
|---|---|

* Patient_Email

| Patient_Email | Patient_ID |
|---|---|