

# Amendments in the initial ERD

## Visitor:

- The cardinalities of relation between visitors and in-patient has been changed from many-to-many optional to optional many to mandatory one. This means that earlier it was, a visitor may visit one or more than one patient. But now, since the other side is a mandatory relationship, a visitor must have a patient to visit and a patient may have many visitors.
- An attribute named number of passes has been removed and instead of that, "Name of the visitor" and "Date of visit" has been added.
- Admission ID is the additional foreign key with Patient ID.

## Inpatient:

- Three attributes has been replaced with three new attributes, Admission ID is a primary key as well as it is foreign key, Room ID is the foreign key from Rooms Table and date of discharge.
- Admission ID is the primary key replacing patient ID.
- Inpatient has formed many-to-many relationship with a new entity Nurses and an associative entity is created to dissolve the many-to-many.

## Assigned:

- This is the associative entity that is mentioned in the above point.
- Each in-patient will have many assigned nurses and a nurse may have many assignments.
- So, for that it should have Admission ID, Nurse ID, Date of Assignment and Time as attributes.

## Nurses:

- This is the new entity that has been introduced in this ERD.
- A nurse can attend many patients and similarly an in-patient can have many nurses taking care of them.
- The attributes for the Nurses entity is: as the nurses are the employees they will have Nurse ID as the primary key and contact number and shift time as the simple attributes.

## Rooms:

- Some attributes have been removed from the Room entity have been removed. So, now the entity has Room ID as the primary key and other are Room Category, Room Price, and Room No.

**Record:**

- A new entity named Record has been added to the ERD.
- The relationship is stated as a record must have an admission.
- Admission Id is the foreign key here. And Record ID is the primary key of the entity.
- The other attributes of Records are Diagnosis and Medicines Prescribed.

**Admission:**

- Consultation, an entity in the previous ERD has been changed to Admission.
- The primary key of Admission entity is Admission ID. Attributes from the previous ERD under Consultation entity have been deleted in the renamed entity as Admission.
- A few attributes that were redundant and were dependent such as Blood Test Requirement and Most likely Diagnosis.
- There is a change in the relationship between Admission (earlier Consultation) and Prescription. Earlier it was Consultation may have a prescription and a prescription may have many consultations now, as the entity name has changed to Admission, the change in the relation is Prescription must have an Admission.
- The foreign key DoctorID is now placed in admission instead of appointment.
- Added date of admission and time as new attributes as they differ from appointment date and time.

**Outpatient:**

- The relation between Outpatient and Patient is no more and therefore the Patient ID is not the primary key as well as Patient ID is removed as the primary/foreign key.
- Foreign key as Report number is also deleted.
- Admission ID is the primary key.
- The relationship between Lab and Outpatient is deleted.

**Lab:**

- There are some alterations in the attributes, which are, Admission ID is the foreign key and Patient ID has been removed from the table because of the redundancy and RBC count, WBC count, Platelet count have been replaced with Test Date, Type of Test, Test Result, Cost.

**Patient:**

- Patient entity has most of the attributes same from the previous ERD but the only change is in the Address attribute.
- Zip code is the new attribute in Patient entity which is a foreign key.

**Appointment:**

- Changed appointment from an associative entity to a normal entity as the date of appointment and the date of admission is different.
- Deleted the relation between the appointment entity and the doctors entity.

**Address:**

- Address has been set up as a totally different entity to remove the composite attributes
- Address has 2 attributes: City and State and primary key as Zip Code which is a foreign key in Patient table
- Relationship between address and patient: An address must have one or more than one patient/s.

**Prescription:**

- The relationship between Prescription and Billing has been removed considering the redundancy.
- The relationship between Prescription and Admission (formerly named as Consultation) has been changes which is mentioned under Admission's point. And that is why the foreign key in this table is Admission ID.
- Patient ID which was the identifier in the previous ERD has been removed from this entity to reduce the redundancy.

**Insurance:**

- The relationship between Insurance and Patient has been deleted because of the redundancy and that is the reason Patient ID is no more a foreign key.

**Billing:**

- The change in attributes of Billing is: Prescription ID is removed because of the redundancy and Admission ID is the foreign which was formerly as Consultation ID.
- The relationship between Billing and Prescription has been removed because Admission ID would have all the necessary data.
- Similarly, to reduce the redundancy Billing and Prescription relation is also deleted.