Hospital management system:

Patient:

The relation “Patient” contains all the information about the patient visiting the hospital such as patient name, age, gender, address etc. The patient id provided is unique to all patients.

Primary Key: patient\_id

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| patient\_id(Pk) | p\_name | gender | age | email | phone\_no |
| not null | varchar | M or F, not null | Int, not null | varchar | varchar |

Department:

“Department” relation contains all the details about the various departments in the hospital. It includes attributes like dept\_id,dept\_name.

|  |  |
| --- | --- |
| department(Pk) | treatment |
| varchar | text |

Doctor:

The relation “Doctor” holds the information of all the Doctors within the hospital. It includes the attributes like doc\_id, doc\_name, dept\_name, gender, address etc.

Primary Key: doc\_id

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| doc\_id(Pk) | doc\_name | d\_gender | age | email | phone\_no | department(FK) | salary |
|  |  |  |  |  |  |  |  |

foriegn key: department references department table

Lab\_test:

The relation “Lab\_test”, corresponds to the information related to the lab reports of the patients. It contains the lab\_id which uniquely identifies the lab report.

|  |  |  |
| --- | --- | --- |
| lab\_id(Pk) | test\_name | fee |
|  |  |  |

Assist Table:

This is a junction table between Patient, Doctor and Lab\_test.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| serial\_no(pk) | lab\_id(Fk) | patient\_id(FK) | doc\_id(FK) | issue\_date |
|  |  |  |  |  |

Primary key: lab\_id, serial\_no

Appointment:

“Appointment” relation contains all the details about the appointments that have been scheduled with the doctors for consultation by the receptionist.

|  |  |  |  |
| --- | --- | --- | --- |
| app\_id(Pk) | patient\_id(FK) | doc\_id(FK) | app\_date |
|  |  |  |  |

Primary key: app\_id,patient\_id,doc\_id

Room:

“Room” relation contains all the details about the room. It includes attributes like room\_no, room\_type, total\_beds, bed\_occupied, status.

|  |  |  |
| --- | --- | --- |
| room\_no(Pk) | room\_type | status |
|  |  |  |

Inpatient\_info:

“Inpatient\_info” relation contains all the details of the patients, who are admitted to the hospital .This is a junction table between Patient, Receptionist & Room tables.

|  |  |  |  |
| --- | --- | --- | --- |
| adm\_id(Pk) | patient\_id(FK) | room\_no(FK) | adm\_date |
|  |  |  |  |

Bill:

“Bill” relation contains all the details about the billing of patients going out or patients getting discharge. It includes attributes like bill\_id, pat\_id, doc\_charge etc.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| bill\_no(Pk) | billed\_for | bill\_amt | bill\_status | bill\_date | patient\_id(FK) |
|  |  |  |  |  |  |

Primary Key: bill\_no

Foriegn key: patient\_id

Medicine:

“Medicine” relation contains all the details about medicines. It includes attributes like id, name, manufactures date ,expiry date,company manufactured

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| m\_id(Pk) | m\_name | m\_date | e\_date | company |
|  |  |  |  |  |

Prescription:

This is a junction table between Patient, Doctor & Medicine tables.

|  |  |  |  |
| --- | --- | --- | --- |
| prs\_id(Pk) | patient\_id(FK) | doc\_id(FK) | m\_id(Fk) |
|  |  |  |  |

FUNCTIONAL DEPENDENCIES:

1NF:-

For our database to be in 1NF, it is necessary for us to follow the following rules:

1. There must not be any multivalued attribute.

2. There must be no repetition.

3. Primary key must be defined.

As attributes do not have sub attributes(also every table is assigned with primary key and they are unique) .So the relation is in 1NF.

2NF:

It should be in 1NF.

For our database to be in 2NF, we need to make sure that all non-key fields must depend on all the primary keys.(i.e for example:Patient Information depends upon the patient ID that will be getting assigned to them while registration. Therefore, pat\_name, p\_gender, email,p\_phone no depends upon the pat\_id. ) same follows to other relations also.

3NF:

it should be in 2NF.

For our database to be in 3NF, we need to make sure that, no non-key value depends upon one another i.e no chain exists.(no transitive dependency exists from non-primary key to primary key )

(note: delete update cascade for all foreign keys)