

Doc no.	Name	Address	Phone 1	Phone 2	Department id	Designation	charges per hour	patient no.	patient Name	CNIC	Phone no.	Room No.	Room Type	Bed no.
D1	Dr . Nadeem	Abc 123	0333-123	042-123	Neurology	Professor	5000	p1	kahlid	12345-1	042-1	R2	normal	B1
D1	Dr . Nadeem	Abc 123	0333-123	042-123	Neurology	Professor	5000	p5	Ahmed	12345-2	042-2	R2	normal	B1
D1	Dr . Nadeem	Abc 123	0333-123	042-123	Neurology	Professor	5000	p7	Anum	12345-3	042-3	nil	nil	nil
D2	Dr. Nadeem	Kb13	0334-124	0300-123	Orthopedic	Professor	5000	p4	mehmood	12345-4	042-4	R2	normal	B1
D2	Dr. Nadeem	Kb13	0334-124	0300-123	Orthopedic	Professor	5000	p7	Anum	12345-3	042-3	R4	Two Bed	B5
D2	Dr. Nadeem	Kb13	0334-124	0300-123	Orthopedic	Professor	5000	p9	khawar	12345-6	042-5	R4	Two Bed	B7
D4	Dr.Erum	Ak123	0321-123	null	ENT/Neurology	Astt Professor	3000	P10	Tanweer	12345-7	042-6	nil	nil	nil
D4	Dr.Erum	Ak123	0321-123	null	ENT/Neurology	Astt Professor	3000	p1	khalid	12345-1	042-1	R5	special	B8
D5	Dr.Hafeez	Nd123	0321-124	null	skin/othopedic	Astt Professor	3000	p12	Sohail	12345-9	042-8	nil	nil	nil
D5	Dr.Hafeez	Nd123	0321-124	null	skin/othopedic	Astt Professor	3000	p13	Ahmed	12346-0	042-9	R6	special	B9

Table 1

Table Name :
Data

Doc no.	Name	Address	Phone 1	Phone 2	Department id	Designation	charges per hour
D1	Dr . Nadeem	Abc 123	0333-123	042-123	Neurology	Professor	5000
D2	Dr. Nadeem	Kb13	0334-124	0300-123	Orthopedic	Professor	5000
D4	Dr.Erum	Ak123	0321-123	null	ENT/Neurology	Astt Professor	3000
D5	Dr.Hafeez	Nd123	0321-124	null	skin/othopedic	Astt Professor	3000

Table 1.1 Table Name Doctor_record

Doc no.	patient no.	Room No.	Room Type	Bed no.
D1	p1	R2	normal	B1
D1	p5	R2	normal	B1
D1	p7	nil	nil	nil
D2	p4	R2	normal	B1
D2	p7	R4	Two Bed	B5
D2	p9	R4	Two Bed	B7
D4	P10	nil	nil	nil
D4	p1	R5	special	B8
D5	p12	nil	nil	nil
D5	p13	R6	special	B9

Table 1.2 Table Name : logs

patient no.	patient Name	CNIC	Phone no.
p1	kahlid	12345-1	042-1
p5	Ahmed	12345-2	042-2
p7	Anum	12345-3	042-3
p4	mehmood	12345-4	042-4
p9	khawar	12345-6	042-5
P10	Tanweer	12345-7	042-6
p12	Sohail	12345-9	042-8
p13	Ahmed	12346-0	042-9

Table 1.3 Table Name : patient Detail

Doc no.	Name	Address	Phone 1	Phone 2	Department id	Designation
D1	Dr . Nadeem	Abc 123	0333-123	042-123	Neurology	Professor
D2	Dr. Nadeem	Kb13	0334-124	0300-123	Orthopedic	Professor
D4	Dr.Erum	Ak123	0321-123	null	ENT/Neurology	Astt Professor
D5	Dr.Hafeez	Nd123	0321-124	null	skin/othopedic	Astt Professor

Table 1.1.1 Table Name : Doctor_record

Designation	Charges per hour
Professor	5000
Astt Professor	3000

Table 1.1.2 table Name : Fees_desc

Doc no.	patient no.	Room No.	Bed no.
D1	p1	R2	B1
D1	p5	R2	B1
D1	p7	nil	nil
D2	p4	R2	B1
D2	p7	R4	B5
D2	p9	R4	B7
D4	P10	nil	nil
D4	p1	R5	B8
D5	p12	nil	nil
D5	p13	R6	B9

Table 1.2.1 Table Name :logs

Room No.	Room Type
R2	normal
R4	Two Bed
R5	special
R6	special

Table 1.2.2 Table Name : Service

Given Table is not in first normal form because Phone attribute contain multiple value

three ways to remove first normal form

1. create columns (here phone 1 ,phone 2) for multiple values
2. insert row for multiple values again in table
3. create new table

In the solution I created new columns in the table no 1

1 reason Table structure is not flexible

2 reason create new rows and create new table rise problem of reference.

Table 1

(Doc no + patient no is candidate key /primary key)

Doc no + patient no → (*Name,Address,Phone,Department id,Designation,charges per hour,patient Name,CNIC,Phone no,Room No,Room type, Bed no*)

Doc no → (*Name ,Address , Phone ,Department id , designatoin ,charges per hour*)

patient no → (*patient name, CNIC, phone no*)

In the table 1 : (Doc no + patient) is the candidate key/Primary key

prime attribute finding non-prime attribute here partial dependencies. So it's not in second Normal Form

To achieve 2 NF

create 3 separate tables

Table 1.1 Table Name Doctor_re

Table 1.2 Table Name : logs

Table 1.3 Table Name : patient Detail

Table 1.1

Doc no is candidate key /primary key

Doc no → (Doc no,Name ,Address,Department id,Designation , charges per hour)

Designation → (charges per hour)

Non-prime attribute finding non-prime attribute
here transitive dependencies so it's not in 3NF

To achieve 3 NF

create 2 separate tables

Table 1.1.1 Table Name : Doctor_record

Table 1.1.2 table Name : Fees_desc

Table 1.2

(Doc no + patient no) is candidate key/ primary key

Doc no , patient as foreign key

Doc no + patient no - > (Room no , Room type , Bed No)

Room no → Room type

same transitive dependencies

To achieve 3 NF

create 2 separate tables

Table 1.2.1 Table Name :logs

Table 1.2.2 Table Name :Services

(patient no , CNIC both candidate key)

Table 1.1.1 Table Name : Doctor_record

Doc no is candidate key/ primary key

Designation is foreign key

Table 1.1.2 table Name : Fees_desc

Designation is candidate key / Primary key

Table 1.2.1 Table Name :logs

(Doc no + patient no) is candidate key/ primary key

Doc no , patient , Room no as foreign key

Table 1.2.2 Table Name :Services

Room no is candidate key / Primary Key

Link for clear visualization on [Excel sheet link](#)