Doc No.	Name	Address	Phone	Department I	Designation	Charges per	Patient No.	Patient Name	CNIC	Phone	Room No	Room Type	Bed No.
	Dr. Nadeem	Abc 123	0333-123,042-12	Neurology	Professor	5000	P1	Khalid	12345-1	042-1	R2	Normal	B1
							P5	Ahmed	12345-2	042-2			
D1							P7	Anum	12345-3	042-3	Nil		Nil
	Dr. Nadeem	kb13	0334-124, 0300-	Orthopedic	Professor	5000	P4	Mehmood	12345-4	042-4	R2	Normal	B1
							P7	Anum	12345-3	042-3	R4	Two Bed	B5
D2							P9	Khawar	12345-6	042-5			B7
	Dr. Erum	Ak123	0321-123	ENT/Neurology	Astt.Professor	3000	P10	Tanweer	12345-7	042-6	Nil		Nil
D4							P1	Khalid	12345-1	042-1	R5	Special	B8
	Dr. Hafeez	Nd123	0321-124	Skin/Orthopedic	Asst.Professor	3000	P12	Sohail	12345-9	042-8	Nil		Nil
D5							P13	Ahmed	12346-0	042-9	R6	Special	B9

1NF

Now Converting to 1 NF is removing multi -values, after reducing we get,

Doc No.	Name	Address	Phone	Department I	Designation	Charges per	Patient No.	Patient Name	CNIC	Phone	Room No	Room Type	Bed No.
D1	Dr. Nadeem	Abc 123	0333-123	Neurology	Professor	5000	P1	Khalid	12345-1	042-1	R2	Normal	B1
D1	Dr. Nadeem	Abc 123	042-123	Neurology	Professor	5000	P1	Khalid	12345-1	042-1	R2	Normal	B1
D1	Dr. Nadeem	Abc 123	0333-123	Neurology	Professor	5000	P5	Ahmed	12345-2	042-2	R2	Normal	B1
D1	Dr. Nadeem	Abc 123	042-123	Neurology	Professor	5000	P5	Ahmed	12345-2	042-2	R2	Normal	B1
D1	Dr. Nadeem	Abc 123	0333-123	Neurology	Professor	5000	P7	Anum	12345-3	042-3	Nil		Nil
D1	Dr. Nadeem	Abc 123	042-123	Neurology	Professor	5000	P7	Anum	12345-3	042-3	Nil		Nil
D2	Dr. Nadeem	kb13	0334-124	Orthopedic	Professor	5000	P4	Mehmood	12345-4	042-4	R2	Normal	B1
D2	Dr. Nadeem	kb13	0300-123	Orthopedic	Professor	5000	P4	Mehmood	12345-4	042-4	R2	Normal	B1
D2	Dr. Nadeem	kb13	0334-124	Orthopedic	Professor	5000	P7	Anum	12345-3	042-3	R4	Two Bed	B5
D2	Dr. Nadeem	kb13	0300-123	Orthopedic	Professor	5000	P7	Anum	12345-3	042-3	R4	Two Bed	B5
D2	Dr. Nadeem	kb13	0334-124	Orthopedic	Professor	5000	P9	Khawar	12345-6	042-5	R4	Two Bed	B7
D2	Dr. Nadeem	kb13	0300-123	Orthopedic	Professor	5000	P9	Khawar	12345-6	042-5	R4	Two Bed	B7
D4	Dr. Erum	Ak123	0321-123	ENT	Astt.Professor	3000	P10	Tanweer	12345-7	042-6	Nil		Nil
D4	Dr. Erum	Ak123	0321-123	Neurology	Astt.Professor	3000	P10	Tanweer	12345-7	042-6	Nil		Nil
D4	Dr. Erum	Ak123	0321-123	ENT	Astt.Professor	3000	P1	Khalid	12345-1	042-1	R5	Special	B8
D4	Dr. Erum	Ak123	0321-123	Neurology	Astt.Professor	3000	P1	Khalid	12345-1	042-1	R5	Special	B8
D5	Dr. Hafeez	Nd123	0321-124	Skin	Astt.Professor	3000	P12	Sohail	12345-9	042-8	Nil		Nil
D5	Dr. Hafeez	Nd123	0321-124	Orthopedic	Astt.Professor	3000	P12	Sohail	12345-9	042-8	Nil		Nil
D5	Dr. Hafeez	Nd123	0321-124	Skin	Astt.Professor	3000	P13	Ahmed	12346-0	042-9	R6	Special	B9
D5	Dr. Hafeez	Nd123	0321-124	Orthopedic	Astt.Professor	3000	P13	Ahmed	12346-0	042-9	R6	Special	B9

2 NF

Now here Candidate key is Doc no. and Patient No. and table will get split into 3 tables to remove partial dependency

Doc No.	Name	Address	Phone	Department I	Designation	Charges per	Patient No.
D1	Dr. Nadeem	Abc 123	0333-123	Neurology	Professor	5000	P1
D1	Dr. Nadeem	Abc 123	042-123	Neurology	Professor	5000	P1
D1	Dr. Nadeem	Abc 123	0333-123	Neurology	Professor	5000	P5
D1	Dr. Nadeem	Abc 123	042-123	Neurology	Professor	5000	P5
D1	Dr. Nadeem	Abc 123	0333-123	Neurology	Professor	5000	P7
D1	Dr. Nadeem	Abc 123	042-123	Neurology	Professor	5000	P7
D2	Dr. Nadeem	kb13	0334-124	Orthopedic	Professor	5000	P4
D2	Dr. Nadeem	kb13	0300-123	Orthopedic	Professor	5000	P4
D2	Dr. Nadeem	kb13	0334-124	Orthopedic	Professor	5000	P7
D2	Dr. Nadeem	kb13	0300-123	Orthopedic	Professor	5000	P7
D2	Dr. Nadeem	kb13	0334-124	Orthopedic	Professor	5000	P9
D2	Dr. Nadeem	kb13	0300-123	Orthopedic	Professor	5000	P9
D4	Dr. Erum	Ak123	0321-123	ENT	Astt.Professor	3000	P10
D4	Dr. Erum	Ak123	0321-123	Neurology	Astt.Professor	3000	P10
D4	Dr. Erum	Ak123	0321-123	ENT	Astt.Professor	3000	P1
D4	Dr. Erum	Ak123	0321-123	Neurology	Astt.Professor	3000	P1
D5	Dr. Hafeez	Nd123	0321-124	Skin	Astt.Professor	3000	P12
D5	Dr. Hafeez	Nd123	0321-124	Orthopedic	Astt.Professor	3000	P12
D5	Dr. Hafeez	Nd123	0321-124	Skin	Astt.Professor	3000	P13
D5	Dr. Hafeez	Nd123	0321-124	Orthopedic	Astt.Professor	3000	P13

Patient No.	Patient Name	CNIC	Phone
P1	Khalid	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

Doc No.	Patient No.	Room No	Room Type	Bed No.
D1	P1	R2	Normal	B1
D1	P5			
D1	P7	Nil		Nil
D2	P4	R2	Normal	B1
D2	P7	R4	Two Bed	B5
D2	P9			B7
D4	P10	Nil		Nil
D4	P1	R5	Special	B8
D5	P12	Nil		Nil
D5	P13	R6	Special	B9

3 NF

3 NF is to remove transitive dependency and here in 3rd table Bed No. depends on Doc No. and Patient No. but Room Type and Room No. depends on Bed No. therefore we need to split this table

Doc No.	Name	Address	Phone	Department I	Designation	Charges per	Patient No.
D1	Dr. Nadeem	Abc 123	0333-123	Neurology	Professor	5000	P1
D1	Dr. Nadeem	Abc 123	042-123	Neurology	Professor	5000	P1
D1	Dr. Nadeem	Abc 123	0333-123	Neurology	Professor	5000	P5
D1	Dr. Nadeem	Abc 123	042-123	Neurology	Professor	5000	P5
D1	Dr. Nadeem	Abc 123	0333-123	Neurology	Professor	5000	P7
D1	Dr. Nadeem	Abc 123	042-123	Neurology	Professor	5000	P7
D2	Dr. Nadeem	kb13	0334-124	Orthopedic	Professor	5000	P4
D2	Dr. Nadeem	kb13	0300-123	Orthopedic	Professor	5000	P4
D2	Dr. Nadeem	kb13	0334-124	Orthopedic	Professor	5000	P7
D2	Dr. Nadeem	kb13	0300-123	Orthopedic	Professor	5000	P7
D2	Dr. Nadeem	kb13	0334-124	Orthopedic	Professor	5000	P9
D2	Dr. Nadeem	kb13	0300-123	Orthopedic	Professor	5000	P9
D4	Dr. Erum	Ak123	0321-123	ENT	Astt.Professor	3000	P10
D4	Dr. Erum	Ak123	0321-123	Neurology	Astt.Professor	3000	P10
D4	Dr. Erum	Ak123	0321-123	ENT	Astt.Professor	3000	P1
D4	Dr. Erum	Ak123	0321-123	Neurology	Astt.Professor	3000	P1
D5	Dr. Hafeez	Nd123	0321-124	Skin	Astt.Professor	3000	P12
D5	Dr. Hafeez	Nd123	0321-124	Orthopedic	Astt.Professor	3000	P12
D5	Dr. Hafeez	Nd123	0321-124	Skin	Astt.Professor	3000	P13
D5	Dr. Hafeez	Nd123	0321-124	Orthopedic	Astt.Professor	3000	P13

Patient No.	Patient Name	CNIC	Phone
P1	Khalid	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

Doc No.	Patient No.	Bed No.
D1	P1	B1
D1	P5	
D1	P7	Nil
D2	P4	B1
D2	P7	B5
D2	P9	B7
D4	P10	Nil
D4	P1	B8
D5	P12	Nil
D5	P13	B9

Bed No	Room Type	Room No.
B1	Normal	R2
B5	Two bed	R4
B7	Two bed	R4
B8	Special	R5
B9	Special	R6
NIL	Nil	NIl

BCNF

Removing all the Redundancies

Phone Table

Doc No.	Phone No.
D1	0333-123
D1	042-123
D2	0334-124
D2	0300-123
D4	0321-123
D5	0321-124

Department Table

Doc No.	Department Id
D1	Neurology
D2	Orthopedic
D4	ENT
D4	Neurology
D5	Skin
D5	Orthopedic

Doc-Patient Table

Doc No.	Patient No.
D1	P1
D1	P5
D1	P7
D2	P4
D2	P7
D2	P9
D4	P10
D4	P1
D5	P12
D5	P13

Doctor Table

Doc No.	Name	Address	Designation	Charges per Hour
D1	Dr. Nadeem	Abc 123	Professor	5000
D2	Dr. Nadeem	kb13	Professor	5000
D4	Dr. Erum	Ak123	Astt.Professor	3000
D5	Dr. Hafeez	Nd123	Asst.Professor	3000

Patient Table

Patient No.	Patient Name	CNIC	Phone
P1	Khalid	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

Bed No. Table

Doc No.	Patient No.	Bed No.
D1	P1	B1
D1	P5	
D1	P7	Nil
D2	P4	B1
D2	P7	B5
D2	P9	B7
D4	P10	Nil
D4	P1	B8
D5	P12	Nil
D5	P13	B9

Bed Table

Bed No	Room Type	Room No.
B1	Normal	R2
B5	Two bed	R4
B7	Two bed	R4
B8	Special	R5
B9	Special	R6
NIL	Nil	NIl

Hence Now TAble is Normalized in BCNF form