

RDBMS Assignment

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1NF:

Here, the attributes Phone, Department ID, Room no, Room Type had multiple values. So it has been changed as each record with single values.

Doc No	Name	Address	Phone	Department ID	Designation	Charge/hr	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	P5	Ahmed	12345-2	042-2	R2	Normal	B1
D2	Dr. Nadeem	Kb 13	0334-124	Orthopedic	Professor	5000	P7	Anum	12345-3	042-3	N11		N11
D2	Dr. Nadeem	Kb 13	0300-123	Orthopedic	Professor	5000	P4	Mehmood	12345-4	042-4	R2	Normal	B1
D4	Dr. Ennum	Ak 123	0321-123	ENT	Asst. Prof	8000	P7	Anum	12345-3	042-3	R4	Two bed	B5
D4	Dr. Ennum	Ak 123	0321-123	Neurology	Asst. Prof	3000	P9	Khawar	12345-6	042-5	R4	Two bed	B7
D5	Dr. Hafez	Nd 123	0321-124	Skin	Asst. Prof	3000	P10	Tanweer	12345-7	042-6	N11		N11
D5	Dr. Hafez	Nd 123	0321-124	Orthopedic	Asst. Prof	3000	P1	Khalid	12345-1	042-1	R5	Special	B8
							P12	Sohail	12345-9	042-8	N11		N11
							P13	Ahmed	12345-0	042-9	R6	Special	B9

2NF:

The attributes Charges and Room Type are non prime attributes and they have partial dependencies. They have been removed and tables have been created.

Doc No	Name	Address	Phone	Dep. ID	Designation	Patient No	Patient Name	CNIC	Phone	Room No	Bed No
D1	Dr. Nadeem	Abc 123	0333-123	Neurology	Professor	P1	Khalid	12345-1	042-1	R2	B1
D1	Dr. Nadeem	Abc 123	042-123	Neurology	Professor	P5	Ahmed	12345-2	042-2	R2	B1
D2	Dr. Nadeem	Kb 13	0334-124	Orthopedic	Professor	P7	Anum	12345-3	042-3	N11	N11
D2	Dr. Nadeem	Kb 13	0300-123	Orthopedic	Professor	P4	Mehmood	12345-4	042-4	R2	B1
D4	Dr. Ennum	Ak 123	0321-123	ENT	Asst. Prof	P7	Anum	12345-3	042-3	R4	B5
D4	Dr. Ennum	Ak 123	0321-123	Neurology	Asst. Prof	P9	Khawar	12345-6	042-5	R4	B7
D5	Dr. Hafez	Nd 123	0321-124	Skin	Asst. Prof	P10	Tanweer	12345-7	042-6	N11	N11
D5	Dr. Hafez	Nd 123	0321-124	Orthopedic	Asst. Prof	P1	Khalid	12345-1	042-1	R5	B8
						P12	Sohail	12345-9	042-8	N11	N11
						P13	Ahmed	12345-0	042-9	R6	B9

Designation	Charge/hr	Room No	Room Type
Professor	5000	R2	Normal
Asst. Prof	3000	R4	Two bed
		R5	Special
		R6	Special

3NF:

The Phone Number of Doctors and Patients are transitively dependent to the doctor number and patient number respectively. So, it has been normalized.

Doc No	Doc Name	Address	Dep ID	Designation	Patient No	Patient Name	CNIC	Room No	Bed No
D1	Dr. Nadeem	Abc 123	Neurology	Professor	P1	Khalid	12345-1	R2	B1
D2	Dr. Nadeem	Kb 123	Orthopedic	Professor	P5	Phameed	12345-2	R2	B1
D4	Dr. Enam	Ak 123	ENT	Asst. Prof	P7	Anam	12345-3	N1	N1
D4	Dr. Enam	Ak 123	Neurology	Asst. Prof	P4	Mehmood	12345-4	R2	B1
D5	Dr. Hafez	Nd 123	Skin	Asst. Prof	P7	Anam	12345-3	R4	B5
D5	Dr. Hafez	Nd 123	Orthopedic	Asst. Prof	P9	Chawal	12345-6	R4	B7
					P10	Tamween	12345-7	N1	N1
					P12	Khalid	12345-1	R5	B8
					P12	Sohail	12345-9	N1	N1
					P13	Phameed	12345-0	R6	B9

Address	Phone No	CNIC	Phone No
Abc 123	0333-123	12345-0	042-9
Abc 123	042-123	12345-1	042-1
Kb 13	0334-124	12345-2	042-2
Kb 13	0300-123	12345-3	042-3
Ak 123	0321-123	12345-4	042-4
Nd 123	0321-124	12345-6	042-5
		12345-7	042-6
		12345-9	042-8

BCNF:

Every attribute should be functionally dependent on the primary key. But Doctor No and Patient No are not dependent. So, it has been normalized.

Doc No	Doc Name	Address	Dep ID	Designation
D1	Dr. Nadeem	Abc 123	Neurology	Professor
D2	Dr. Nadeem	Kb 123	Orthopedic	Professor
D4	Dr. Enam	Alc 123	ENT	Asst. Prof
D4	Dr. Enam	Alc 123	Neurology	Asst. Prof
D5	Dr. Hafez	Nd 123	Skin	Asst. Prof
D5	Dr. Hafez	Nd 123	Orthopedic	Asst. Prof

Patient No	Patient Name	CNIC	Room No	Bed No
P1	Khalid	12345-1	R2	B1
P5	Phameed	12345-2	R2	B1
P7	Anum	12345-3	N11	N11
P4	Mehmood	12345-4	R2	B1
P7	Anum	12345-3	R4	B5
P9	Chawal	12345-6	R4	B7
P10	Tahira Waseem	12345-7	N11	N11
P12	Khalid	12345-1	R5	B8
P12	Sohail	12345-9	N11	N11
P13	Phameed	12345-5-0	R6	B9