

Doc No	Name	Add	Phone	Dep ID	Des	Charges / hour	Patient No.	Patient Name	Eric	Phone	Room No	Room Type	Bed No
A	B	C	D	E	F	G	H	I	J	K	L	M	N

$R(ABCDEFGHIJKLMN)$

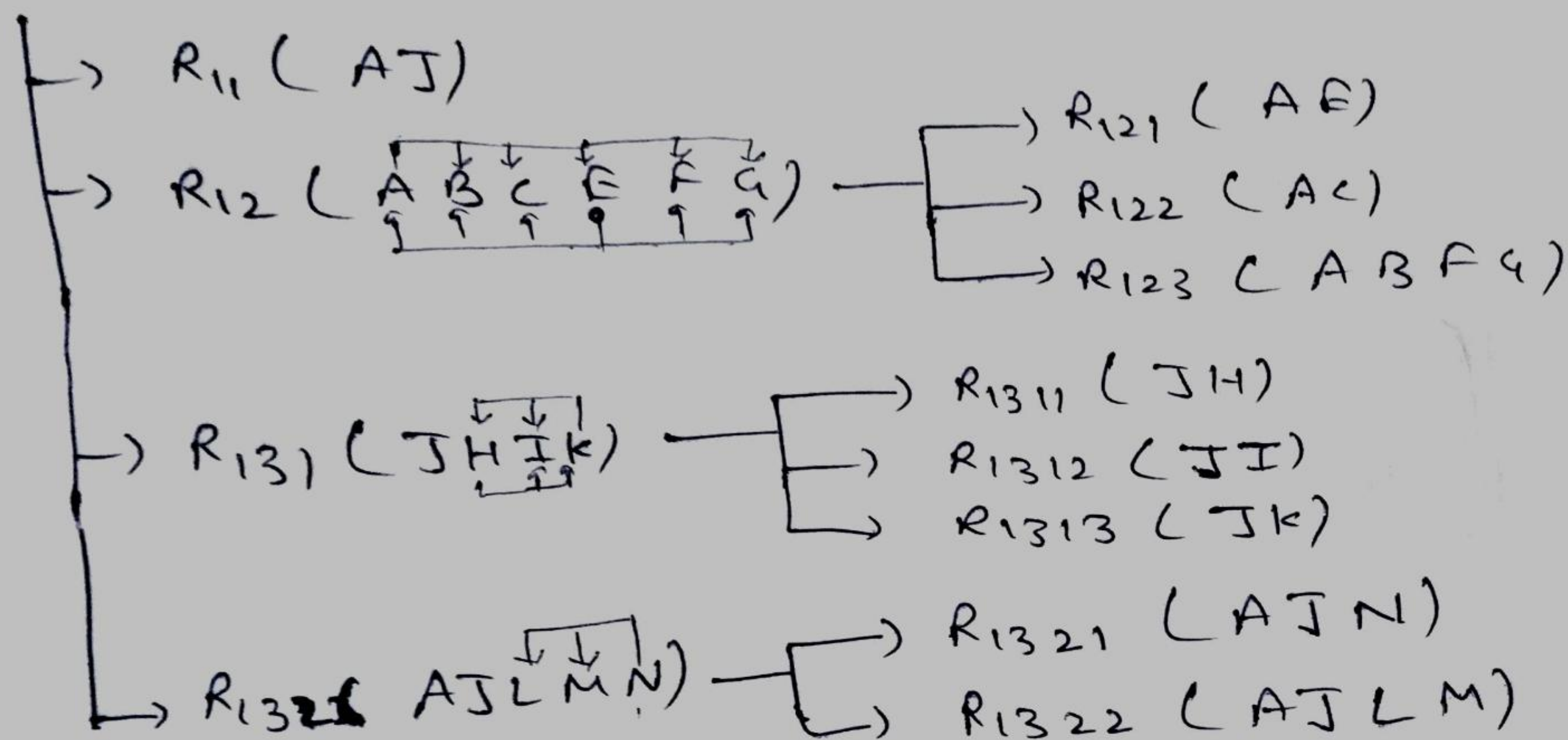
1 NF \rightarrow Convert into Atomic
 \rightarrow Separate table for Multivalent Att.

$\rightarrow R_1(ABC \times EFGHIJKLMN)$
 $\rightarrow R_2(DA)$

2: NF \rightarrow Find functional dep.
 \rightarrow Check for Partial dep. ($P \rightarrow N.P$)
 \rightarrow C.O. Key \mathbf{E} in R_1 is $\Rightarrow AJ \mathbf{B}$

$\rightarrow R_{11}(AJ \mathbf{B})$
 $\rightarrow R_{12}(A \downarrow B \downarrow C \downarrow E \downarrow F \downarrow G)$
 $\rightarrow R_B(AH \downarrow I \downarrow J \downarrow K \downarrow L \downarrow M \downarrow N) \rightarrow \begin{cases} R_{131}(J \downarrow H \downarrow I \downarrow K) \\ R_{132}(A \downarrow J \downarrow L \downarrow M \downarrow N) \end{cases}$

3NF :- Check for transitive dep. ($NP \rightarrow NP$)



BCNF : $P/N.P \xrightarrow{X} P$ (Then Dep. is not in BCNF)

\therefore This is already in BCNF

$\rightarrow R_1 (AJ)$
 $\rightarrow R_2 (AE)$
 $\rightarrow R_3 (AC)$
 $\rightarrow R_4 (ABFG)$

$\rightarrow R_5 (JH)$
 $\rightarrow R_6 (JI)$
 $\rightarrow R_7 (JK)$

$\rightarrow R_8 (AJN)$
 $\rightarrow R_9 (AJLM)$
 $\rightarrow R_{10} (DA)$

R10BR1 (key) ATD

DOC NO	CNIC	Phone
D5	0	#
D1	1	
D1	2	
D1	3	
D2	4	
D2	6	
D4	7	
D5	9	
D2	3	
D4	1	

multivalued
seperate
table

AI

Phone	DocNO
0333-123	D1
042-123	D1
0334-124	D2
0300-123	D2
0321-123	D3
0321-124	D4

DA

R₂ ⇒

Doc NO	Dep ID
D1	N
D2	O
D4	E/N
D5	S/O

(A E)

R₃ ⇒

Doc NO	ADD.
D1	ABC
D2	126
D4	AK
D5	ND

(A C)

R₄ ⇒

Doc NO	Name	Des	Charge
D1	N	P	5000
D2	N	P	5000
D4	E	AS	3000
D5	H	AS	3000

(A B F G)

R₅ ⇒

CNIC	P-NO
12345-0	P13
-1	P1
-2	P5
-3	P7
-4	P4
-6	P9
-7	P10
-9	P12

(H)

R₆ ⇒

CNIC	P-Name
12345-0	Ahmed
-1	Khalid
-2	Ahmed
-3	Ahmed
-4	Mehmoed
-6	Ikhwan
-7	Tamwar
-9	Sohail

(J I)

R₇ ⇒

CNIC	Phone
12345-0	042-9
1	-1
2	-2
3	-3
4	-4
6	-5
7	-6
9	-8

(J K)

R₈ ⇒

Doc NO	CNIC	Bed NO
D5	0	B9
D1	1	B1
D1	2	B1
D1	3	—
D2	4	B1
D2	6	B7
D4	7	—
D5	9	B9
D2	3	B5
D4	1	B8

(A J N)

R₈ ⇒

Doc NO	CNIC	Room NO	Room Type
D5	0	R6	S
D1	1	R2	2
D1	2	R2	2
D1	3	—	1
D2	4	R2	N
D2	6	R4	Two bed
D4	7	—	—
D5	9	—	—
D2	3	R4	Two bed
D4	1	R5	S

(A J L M)