

Normalization

1NF

R1

<u>a</u>	g	b	c	e	d	f	h	i	j	k
----------	---	---	---	---	---	---	---	---	---	---

R2

<u>a</u>	<u>l</u>	m	n	o	p	q	r
----------	----------	---	---	---	---	---	---

R3

<u>s</u>	t	u	v	w	x	y	z	z1
----------	---	---	---	---	---	---	---	----

2NF

R11

<u>a</u>	b	c	e	^x d	^x f
----------	---	---	---	----------------	----------------

R12

<u>a</u>	<u>g</u>	h	i	j	k
----------	----------	---	---	---	---

^x

R2

<u>a</u>	<u>l</u>	m	n	o	p	q	r
----------	----------	---	---	---	---	---	---

^x already in 2NF

R3

<u>s</u>	t	u	v	w	^x x	^x y	^x z	z1
----------	---	---	---	---	----------------	----------------	----------------	----

^x already in 2NF

3NF

R111

<u>c</u>	d
----------	---

R112

<u>e</u>	f
----------	---

R113

<u>a</u>	b	<u>c</u>	<u>e</u>
----------	---	----------	----------

R12

<u>a</u>	<u>g</u>	h	i	j	k
----------	----------	---	---	---	---

 already in 3NF

R2

<u>a</u>	<u>l</u>	m	n	o	p	q	r
----------	----------	---	---	---	---	---	---

 already in 3NF

R31

<u>w</u>	x
----------	---

R32

<u>y</u>	z
----------	---

R33

<u>w</u>	<u>y</u>	z1
----------	----------	----

R34

<u>s</u>	t	u	v	<u>w</u>	<u>y</u>
----------	---	---	---	----------	----------