

Given,

a1 → a2, a3, a4, a5, a6, a7, a8, a9, a10, b1

b1 → b2, c1

c1 → c2, d1, l1

d1 → d2, l1

e1 → e2, e3, c1

a1, e1 → f1

g1 → g2, b1

h1 → h2, h3, h4, h5, g1, e1

i1 → i2, i3, i4

j1 → j2, j3

k1 → k2, k3

l1 → l2, l3, l4, l5, l6, l7, l8, l9, l10, l11, l12, l13, l14

l1 → m1

l1 → n1

l1 → o1

l1 → p1

q1, e1, l1 → q2, q3, q4

q1, e1, l1, r1 → r2, r3, r4, r5, r6, r7

a1, k1 → s1

1NF

R1

<u>i1</u>	i2	i3	i4
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R2

<u>j1</u>	j2	j3
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R3

<u>a1</u>	a2	a3	a4	a5	a6	a7	a8	a9	a10	b1	b2	c1	c2	d1	d2	e1	e2	e3	f1	g1	g2	<u>h1</u>	h2	h3	h4	h5	<u>k1</u>	k2	k3
l1	l2	l3	l4	l5	l6	l7	l8	l9	l10	l11	l12	l13	l14	m1	n1	o1	p1	<u>q1</u>	q2	q3	q4	<u>r1</u>	r2	r3	r4	r5	r6	r7	s1

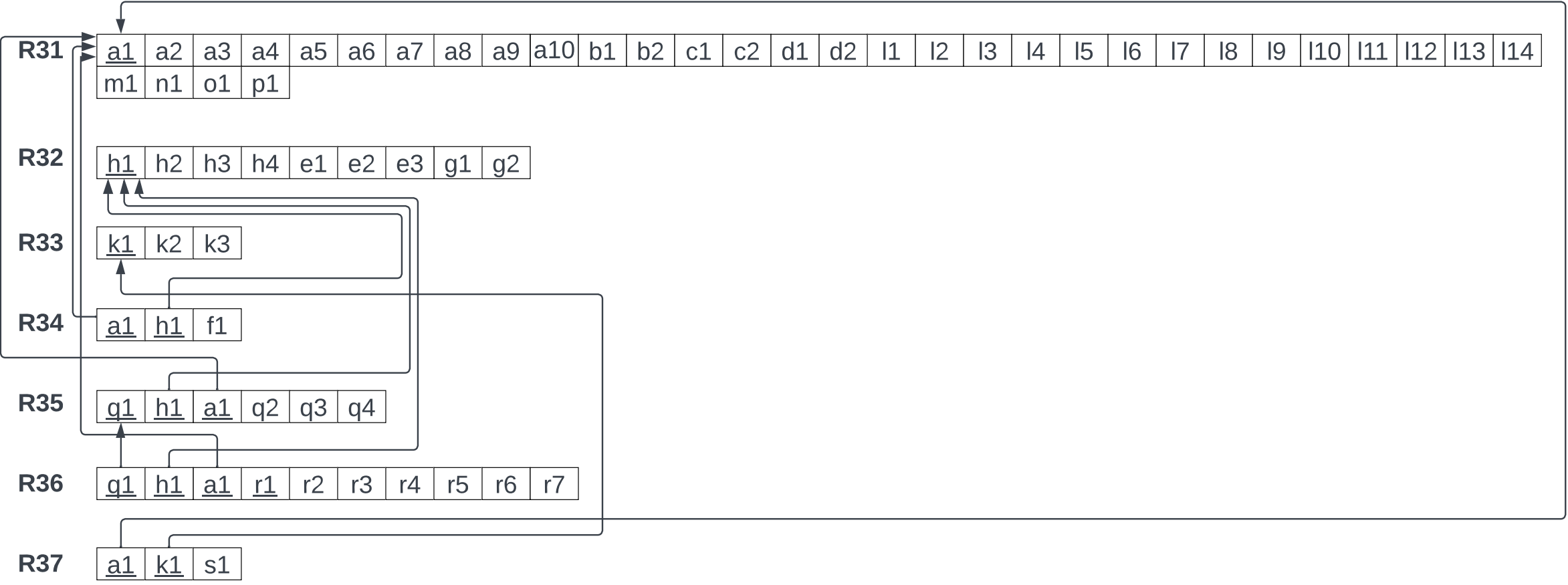
2NF

R1

<u>i1</u>	i2	i3	i4
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R2

<u>j1</u>	j2	j3
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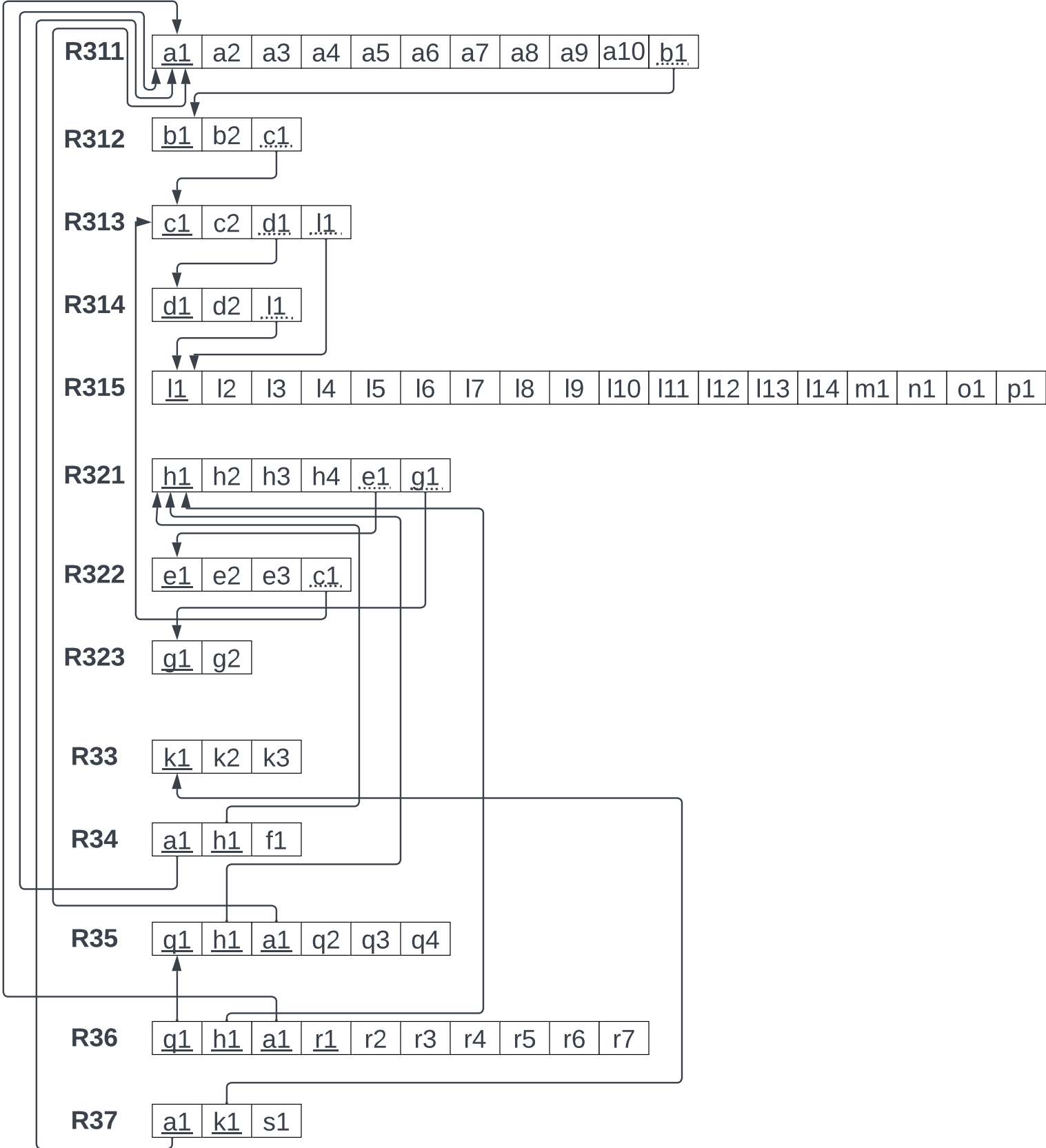
3NF

R1

<u>i1</u>	i2	i3	i4
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R2

<u>j1</u>	j2	j3
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BCNF

There are no relations where a non-key identifies a primary key or part of primary key. Thus all relations are in BCNF.