Data Modeling: put in 3NF

Step 1: Table is already in 1NF

Apply the 3rd normal form on the following dataset.

Case	Age	Prescription	Astigmatism	Tear Production	Lens
1	young	myope	not astigmatic	reduced	none
2	young	myope	not astigmatic	normal	soft
3	young	myope	astigmatic	reduced	none
4	young	myope	astigmatic	normal	hard
5	young	hypermetrope	not astigmatic	reduced	none
6	young	hypermetrope	not astigmatic	normal	soft
7	young	hypermetrope	astigmatic	reduced	none
8	young	hypermetrope	astigmatic	normal	hard
9	pre-presbyopic	myope	not astigmatic	reduced	none
10	pre-presbyopic	myope	not astigmatic	normal	soft
11	pre-presbyopic	myope	astigmatic	reduced	none
12	pre-presbyopic	myope	astigmatic	normal	hard
13	pre-presbyopic	hypermetrope	not astigmatic	reduced	none
14	pre-presbyopic	hypermetrope	not astigmatic	normal	soft
15	pre-presbyopic	hypermetrope	astigmatic	reduced	none
16	pre-presbyopic	hypermetrope	astigmatic	normal	none
17	presbyopic	myope	not astigmatic	reduced	none
18	presbyopic	myope	not astigmatic	normal	none
19	presbyopic	myope	astigmatic	reduced	none
20	presbyopic	myope	astigmatic	normal	hard
21	presbyopic	hypermetrope	not astigmatic	reduced	none
22	presbyopic	hypermetrope	not astigmatic	normal	soft
23	presbyopic	hypermetrope	astigmatic	reduced	none
24	presbyopic	hypermetrope	astigmatic	normal	none

Step 2: 2NF - All attributes depend on the key

Step 3: 3NF - All columns can be determined by the key only

Case	Age	Prescription	Astigmatism	Tear Production	Lens
1	1	1	1	2	1

Age_id	Age
1	young
2	pre-presbyopic
3	presbyoptic

Astig_id	Astigmatism
1	not astigmatic
2	astigmatic

Pres_id	Prescription
1	myope
2	hypermetrope

Tp_id	TearProduction
1	normal
2	reduced

Lens_id	Lens
1	none
2	soft
3	hard

ERD

Case

PK	Case_ID	int
FK	Age_ID	int
FK	Prescription_ID	int
FK	Astigmatism_ID	int
FK	Tear_Production_ID	int
FK	Lens_ID	int

Age

PK	**Age_ID**	int
	Age	varchar(20)

Tear Production

PK	**Tear_Production_ID**	int
	Tear_Production	varchar(20)

Prescription

PK	**Prescription_ID**	int
	Prescription	varchar(20)

Astigmatism

PK	**Astigmatism_ID**	int
	Astigmatism	varchar(20)

Lens

PK	**Lens_ID**	int
	Lens	varchar(20)