

3.4) A key is a single or combination of multiple fields, the purpose is to access and retrieve data rows. A primary key is a key that uniquely identifies the the whole row and it must be unique.

Super key is a combination of attributes used to identify a record, they don't have to be unique

3.9) A foreign key is a column or a group of columns in a relational data base that links data between two tables.

3.11) a) ~~No violation~~ SSN & Super-SSN are numbers not characters

b) No violation

c) Pnumber is a key and can't have 4 in it as insert, it can only be updated.

d) The Pno can't be null.

e) No violation

f) No violation

g) Error due to the Dependent table

h) Error due to works-on having Pno

i) Error can't change number to string.

j) No violation

k) ~~with~~ No violation

3.16) Student → SSN can work as both primary & Foreign

- Course → Course # primary & Foreign

- Enroll → Course # & Quarter or Foreign key

- Book_Adoption & Book_isbn Foreign keys

3.17)

~~not~~ Serial-no, Salesperson_id → Foreign Keys

| Serial_no | Model | Manufacturer | Price | Serialno | Offer_type | Price |
|-----------|-------|--------------|-------|----------|------------|-------|
| 1 | X | A | 1000 | 1 | Radio | 20 |
| 2 | Y | B | 1500 | 1 | AC | 25 |
| 3 | Z | C | 2000 | 2 | Tint | 30 |

| Salesperson_id | Serial-no | Date | Sale Price | Salesperson_id | Name | Phone |
|----------------|-----------|-------|------------|----------------|-------|-------|
| 1 | 1 | 15/12 | 1600 | 1 | Alice | 223 |
| 1 | 2 | 18/12 | 2000 | 2 | Bob | 321 |
| 3 | 3 | 19/12 | 3500 | 3 | Candy | 231 |

Violating

- insert {3, dan, 111} into Salesperson
- insert {4, 1, "20/12", 4000} into Sale

None Violating

- Insert {4, dan, 111} into Salesperson
- Insert {2, B, 15/12, 2000} into Sale

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