Relations

Properties of relations:

1- Unique Name
2- Atomic values for attributes (remove multivalued and composite attributes
3- Each row is unique (no duplication)
4- Each attribute has a unique name
5- Columns sequence is irrelevant
6- Rows sequence is irrelevant

Example on removing multivalued attributes

EMP ID	NAME	DEPT NAME	SALARY	COURSE TITILE	DATE COMPELTED
100	MARGRATE	MARKETING	48.000	SPSS SURVEY	6-10-2015
140	ALAN	ACC	52.000	TAX ACC	6-10-2015
110	CHRIS	INF SYS	43.0000	VISUAL BASICS C++	6-10-2015

100 ---------- SPSS ----------

100 ---------- SURVEY ----------

140 ---------- TAX ACC ----------

110 ---------- VB ----------

110 ---------- C++ ----------

Example of relation schema

CUSTOMER

CUST_ID	C_NAME	C_ADD	C_CITY	Cust.state	C_postal add

ORDER

Order_ID	ORDER DATE	CUST_ID -------

ODER LINE

ORDER_ID	PRODUICT_ID	ORDER QTY

PRODUCT

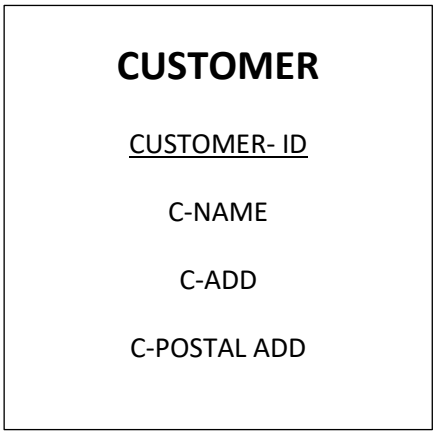
PRODUCT_ID	P_DESC	P_FINISH	P_PRICE	P_LINE ID

Integrity Constraints

- Domain integrity, for columns -→ domain name, meaning, data type, size/length, and range/value
- Entity Integrity, ensures every relation has a unique PK
- Referential Integrity, use of Foreign key to insure association between relations/tables

Transform ER Diagram into Relations

1. Regular Entity



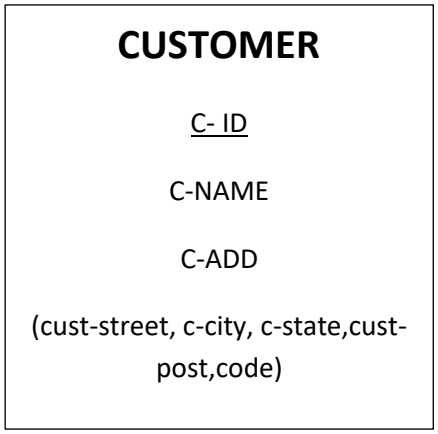
CUSTOMER -ID	C-NAME	C-ADD	C-POSTAL ADD

2. Regular entity having a multivalued attributes.

E -ID	E-NAME	E-ADD

E -ID	SKILL

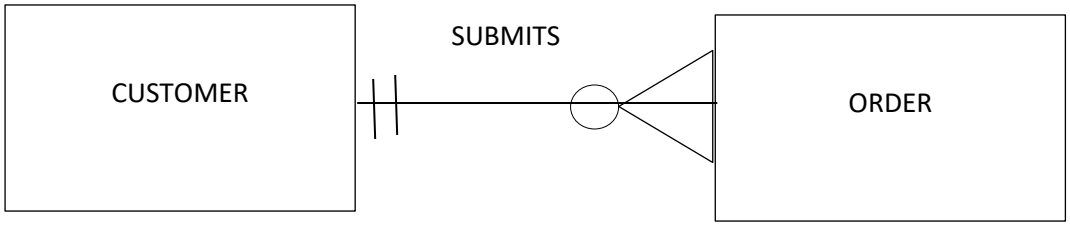
3. Regular Entity with Composite Attributes



CUSTOMER -ID	C-NAME	C-street	C-CITY	C-STATE	C-POSTAL CODE

Map Binary Relationships

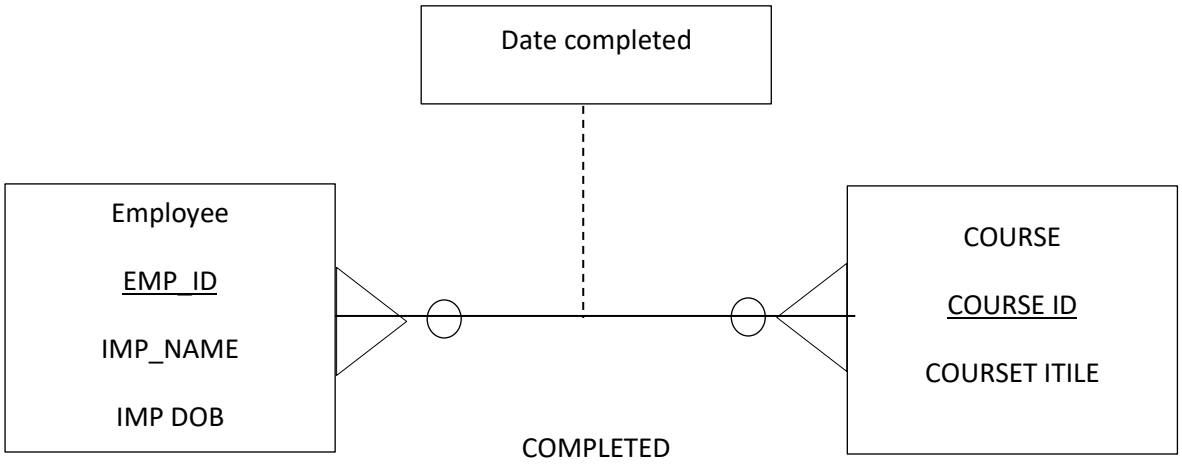
1. ONE TO MANY RELATION



CUST-ID	C-NAME	C-ADDRESS	C-POSTAL-CODE

ORDER-ID	ORDER DATE	CUST-ID

2. MANY TO MANY



EMPLOYEE

EMP_ID	EMP_NAME	EMP DOB

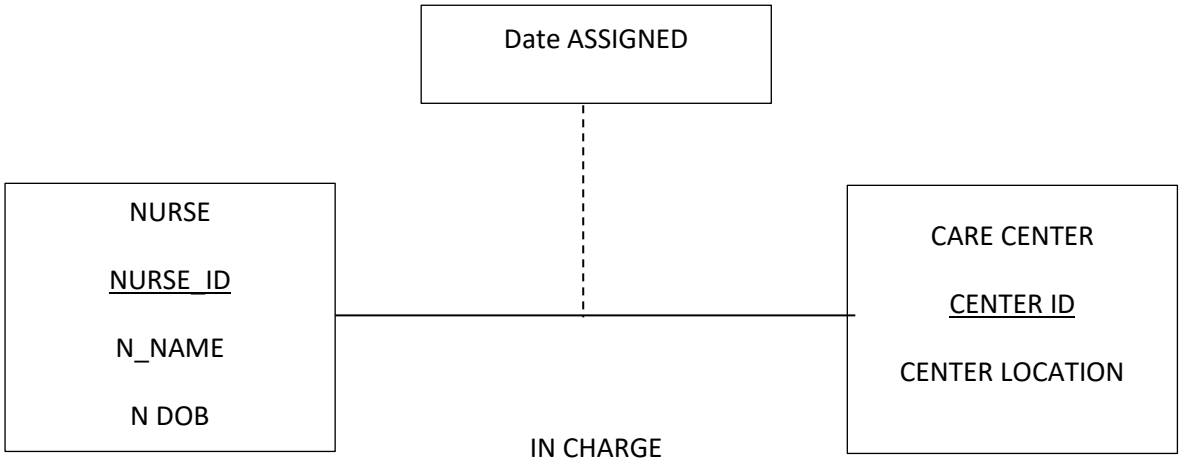
CERTIFICATE

EMP_ID	COURSE_ID	DATE COMPLETED

COURSE

COURSE_ID	COURSE_TITILE

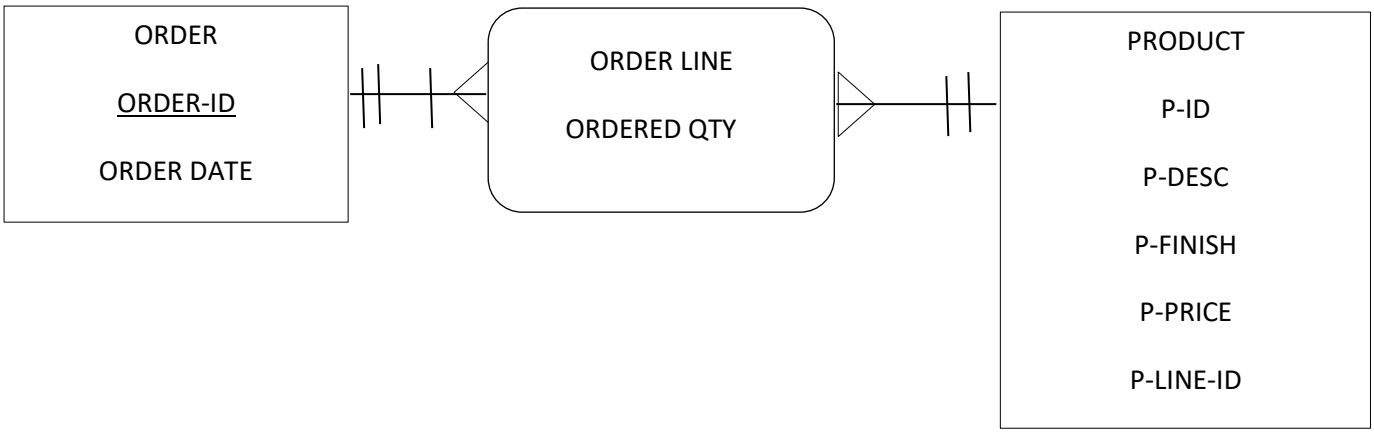
3. ONE TO ONE



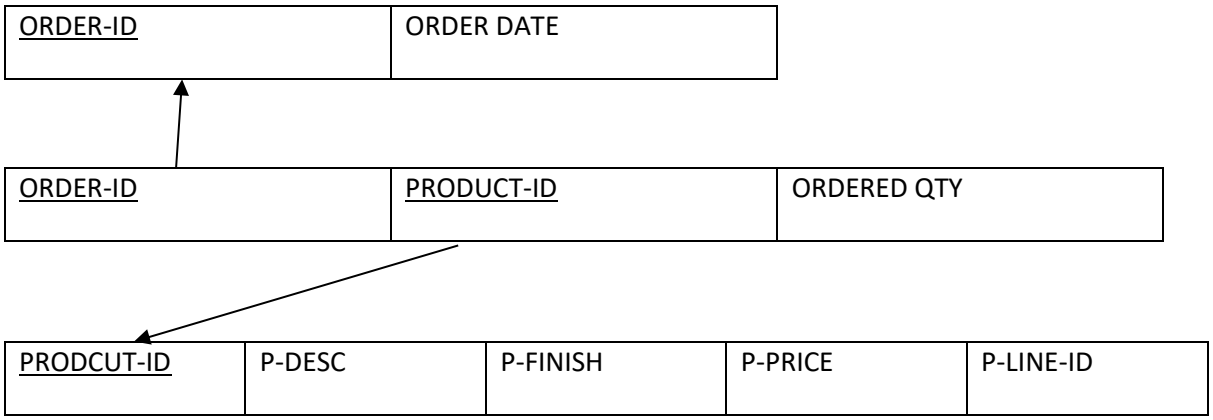
NURSE_ID	N-NAME	N_DOB

CENTER_ID	CENTER LOCATION	NURSE IN CHARGE	DATE ASSIGNED

4. ASSOCIATIVE RELATION

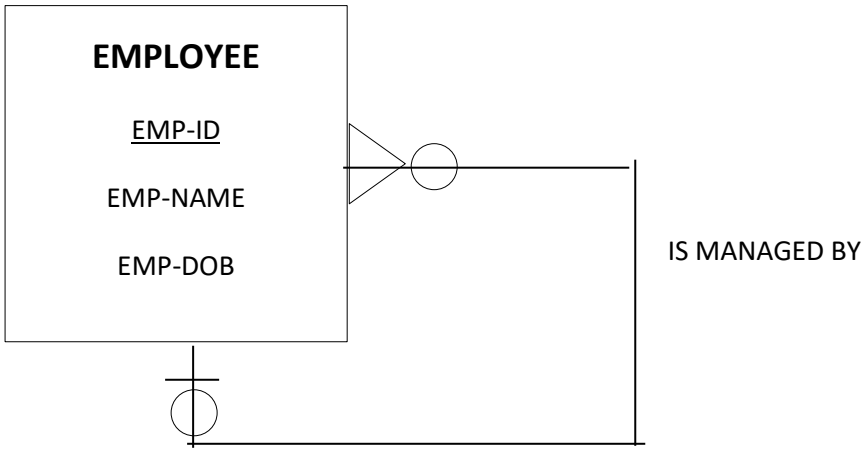


ORDER



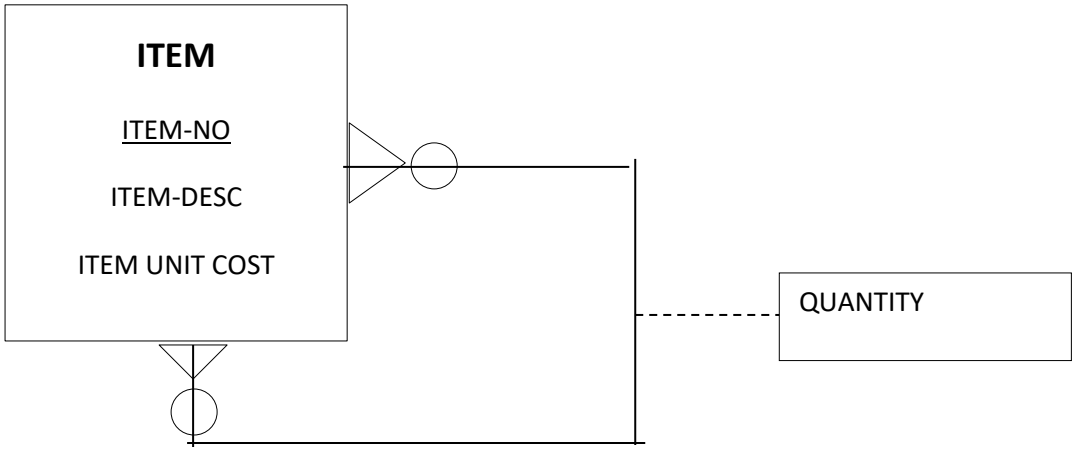
5. MAP UNARY RELATIONSHIPS

a) ONE TO MANY UNARY



EMP-ID	EMP-NAME	EMP-DOB	MANAGER-ID

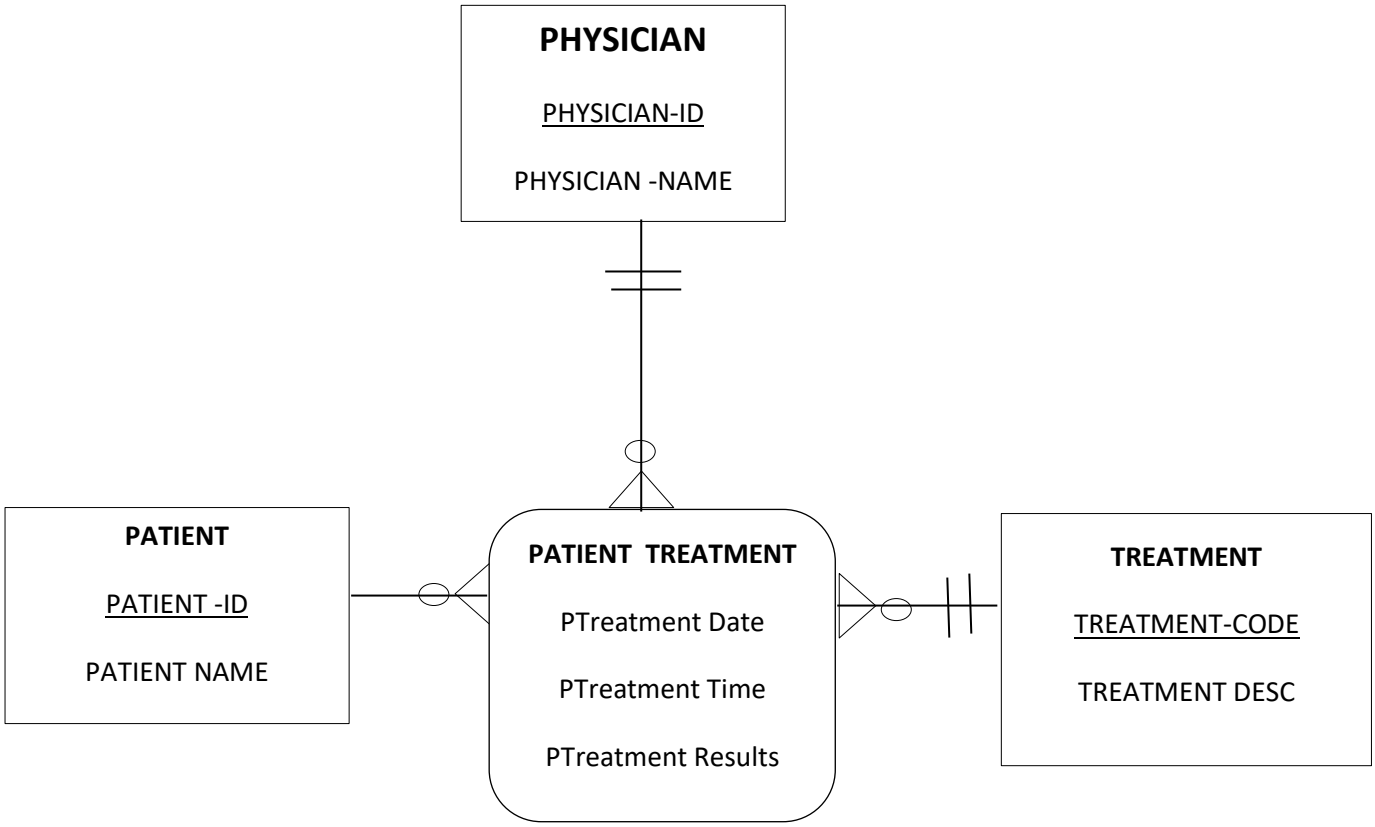
b) MANY TO MANY



ITEM-NO	ITEM-DESC	ITEM UNIT COST

ITEM-NO	COMPONENT ID	QUANTITY

6. Map Ternary (N-Ary) Relations



Patient

PATIENT -ID	PATIENT NAME

Physician

PHYSICIAN-ID	PHYSICIAN -NAME

Treatment

TREATMENT-CODE	TREATMENT DESC

Patient Treatment

PATIENT -ID	PHYSICIAN-ID	TREATMENT-CODE	PTreatment Date	PTreatment Time	PTreatment Results