



# **Discipline**

**ER diagram**

*(3 versions)*

**CS5201**

**Stage-2**

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## ❖ Steps of forming Entity-Relation:

### Step1) Identifying Entities:

1) USER	2) BUSINESS	3) GOODS
4) PURCHASED	5) SOLD	6) VENDOR
7) CUSTOMER	8) CREDIT	

### Step2) Identifying Attributes and primary keys.

- 1) USER (User\_id, Username, Password)
- 2) BUSINESS (Business\_name, B\_type, B\_location, B\_PhoneNos, B\_emailAdd)
- 3) GOODS (Goods\_id, Goods\_type)
- 4) PURCHASED (P\_qty, P\_date, P\_time, P\_cost)
- 5) SOLD (S\_qty, S\_date, S\_time, S\_cost)
- 6) VENDOR (Vendor\_id, V\_PhoneNos, V\_emailAdd, V\_location, F\_name, M\_name, L\_name)
- 7) CUSTOMER (C\_id, C\_PhoneNos, C\_emailAdd, C\_location, F\_name, M\_name, L\_name)
- 8) CREDIT (Amount\_payed)

### Step3) Identifying relationship and cardinality among entities.






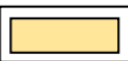




Entities Involved	Relationship name	Attributes	Cardinality
USER & BUSINESS	runs	User_id, Business_name	Many to Many (M-M)

BUSINESS & GOODS	owns	Goods_id, Business_name	Many to Many (M-M)
PURCHASED & VENDOR	Purchased from	Goods_id, Vendor_id	Many to Many (M-M)
SOLD & CUSTOMER	Sold to	Goods_id, C_id	Many to Many (M-M)
BUSINESS & CREDIT	Credit on	Business_name	One to One (1-1)
CUSTOMER & CREDIT	Credit on	C_id	One to One (1-1)
GOODS & CREDIT	Credit on	Goods_id	One to One (1-1)

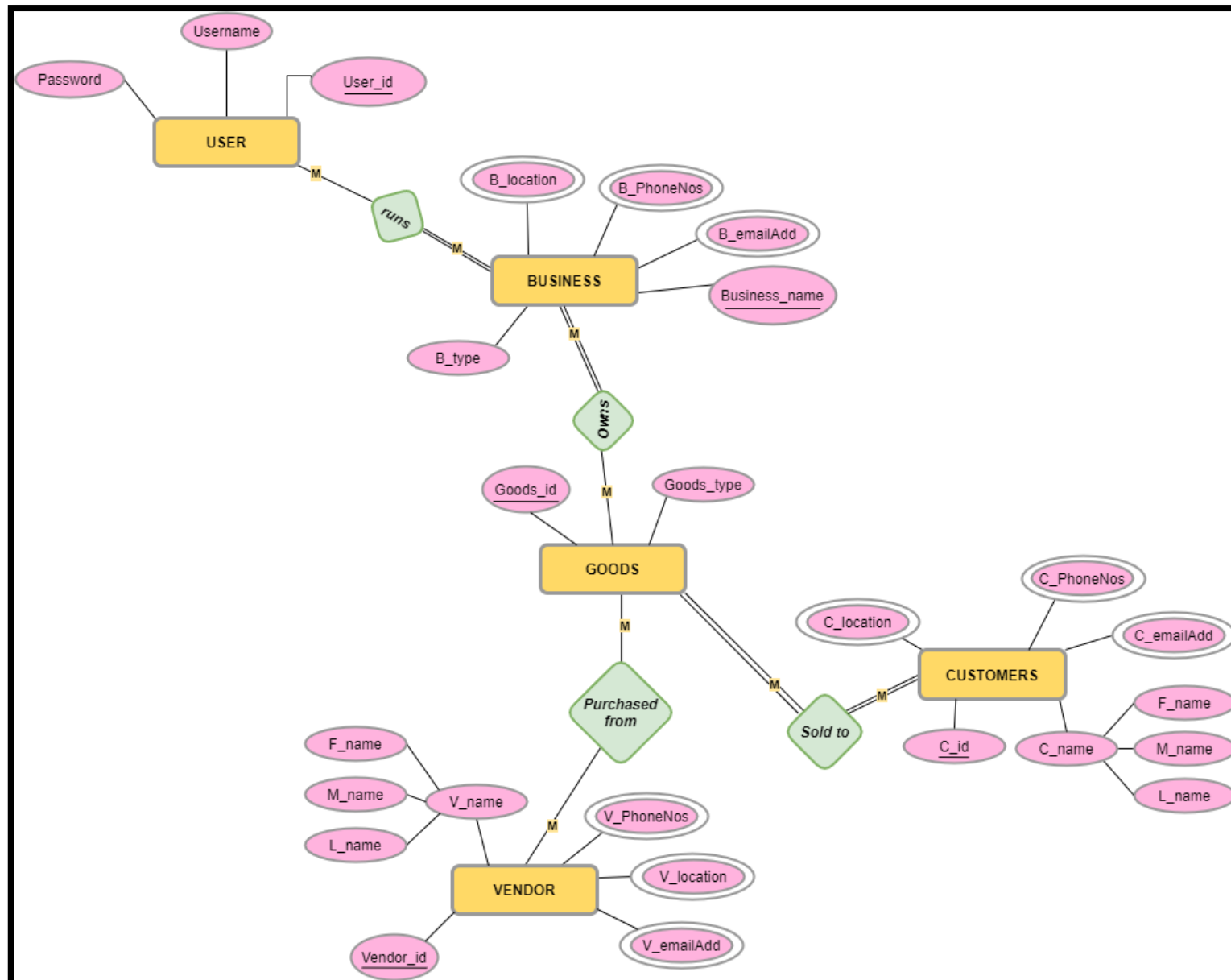
#### Step4) Participation Constraints:

- 1) Goods can't be sold unless and until its in the purchased goods record.
- 2) Although a business could be owned by many people but only one user will have access to application at a time.

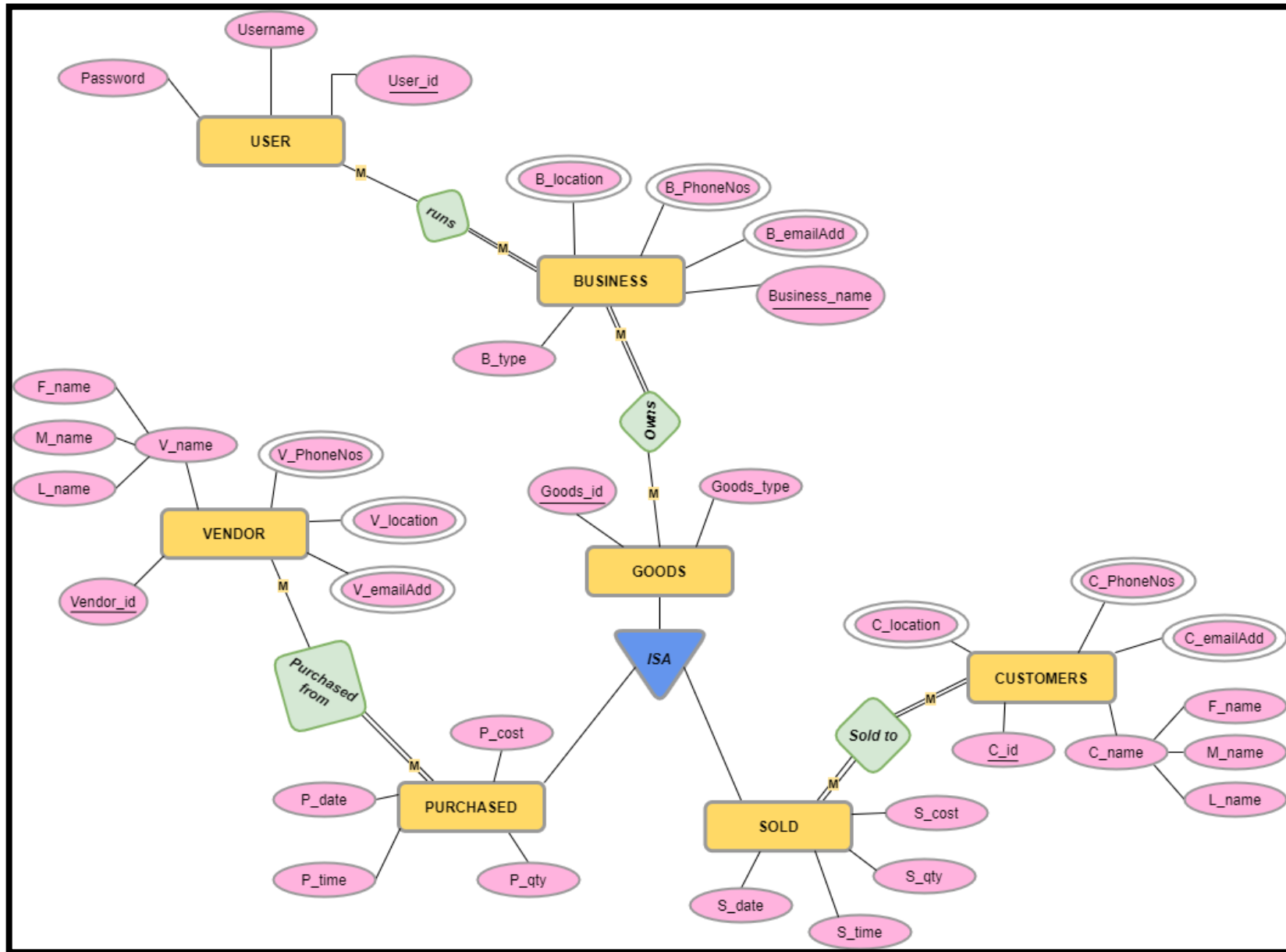
#### Step 5) Sign conventions used in ER-Model.

1) Entity		6) Specialisation	
2) Attribute		7) Relationship	
3) Partial-Participation		8) Weak Entity	
4) Total Participation		9) Derived Attribute	
5) Key Attribute		10) Multivalued Attribute	

❖ ER Model Version 1:



❖ ER Model Version 2:



❖ ER Model Version 3:

