

**Discipline**

**ER diagram**

***(3 versions)***

**CS5201**

Stage-2

**Sheikh Muhammed Tadeeb (AU19B1014)**

* **Steps of forming Entity-Relation:**

**Step1) Identifying Entities:**

|  |  |  |
| --- | --- | --- |
| 1. USER | 1. BUSINESS | 1. GOODS |
| 1. PURCHASED | 1. SOLD | 1. VENDOR |
| 1. CUSTOMER | 1. 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)

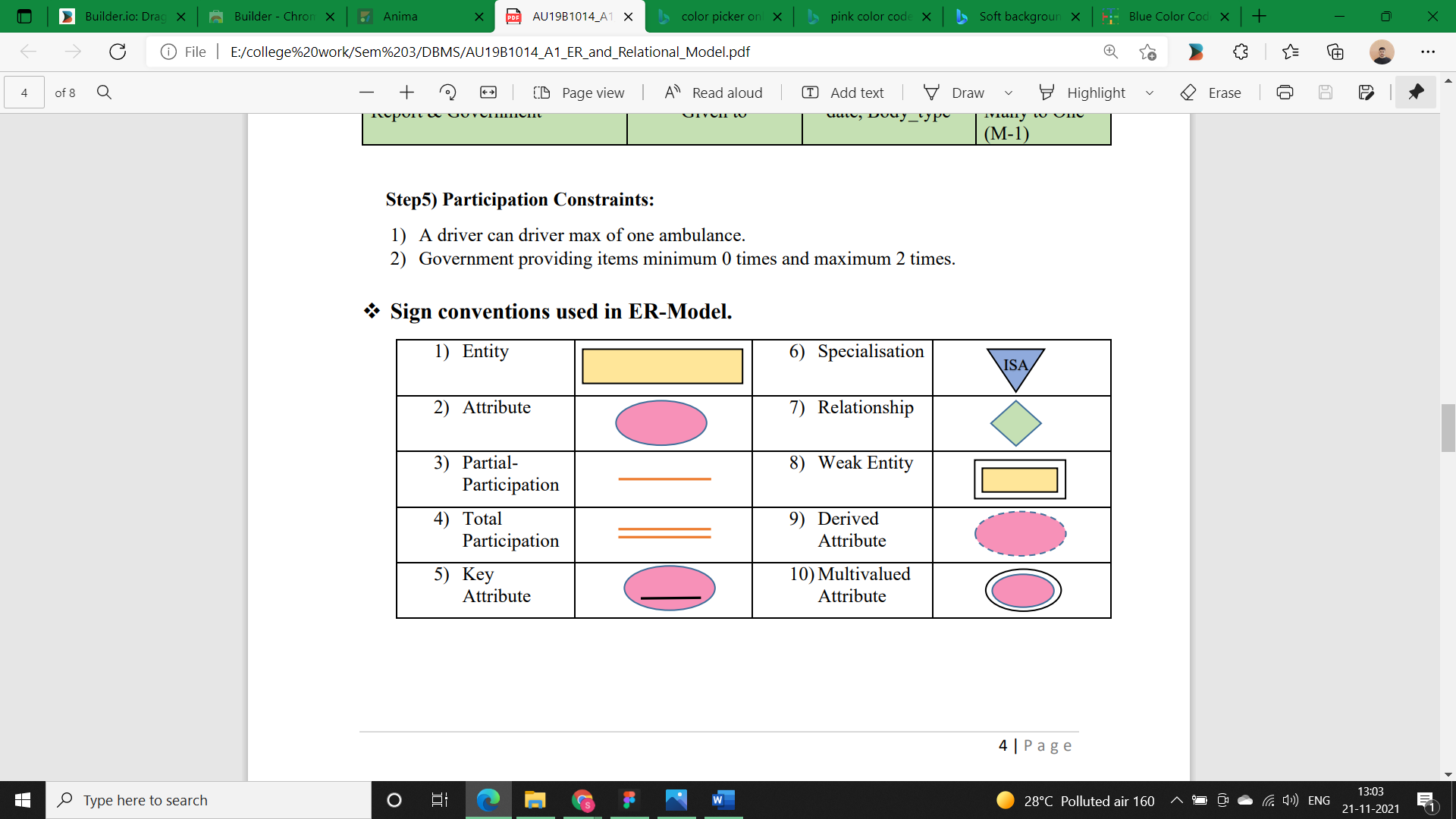
**Step3) Identifying relationship and cardinality among entities.**

|  |  |  |  |
| --- | --- | --- | --- |
| **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) |

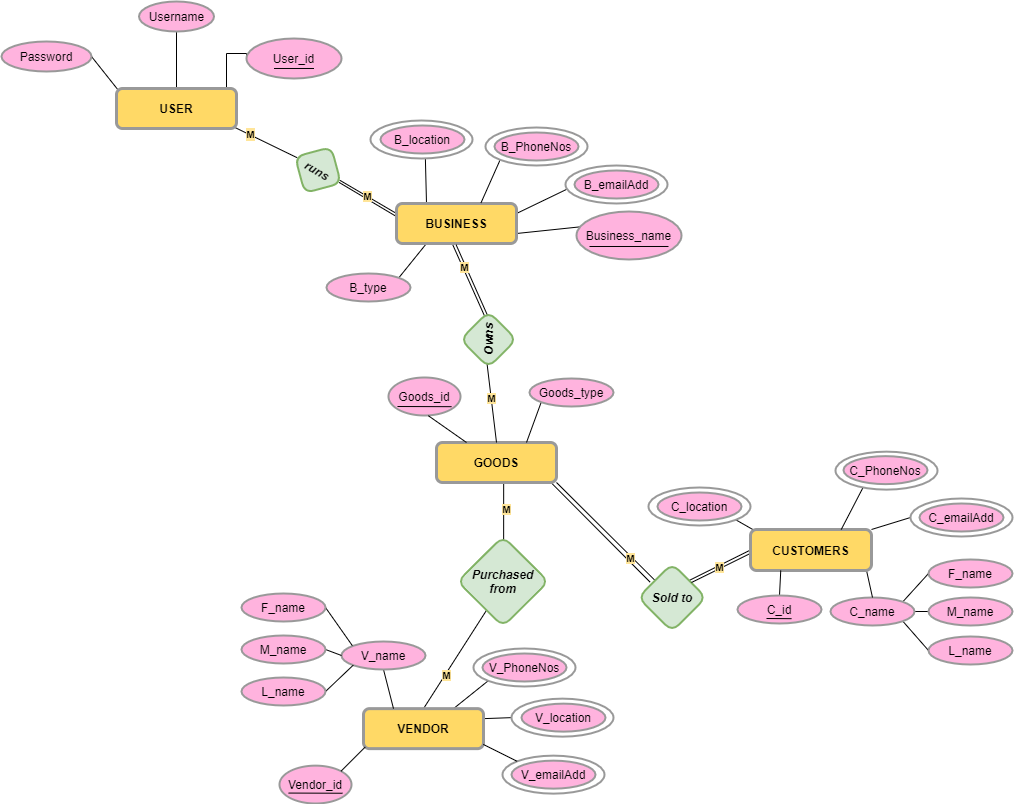
**Step4) Participation Constraints:**

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.

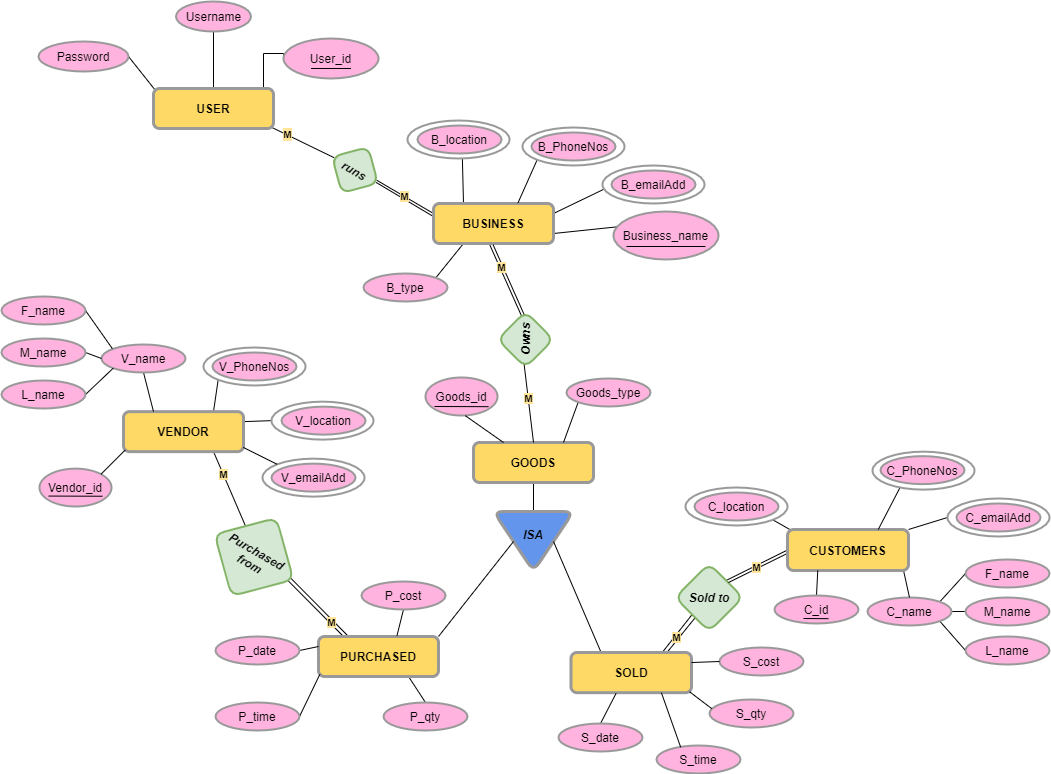
**Step 5) Sign conventions used in ER-Model.**

****

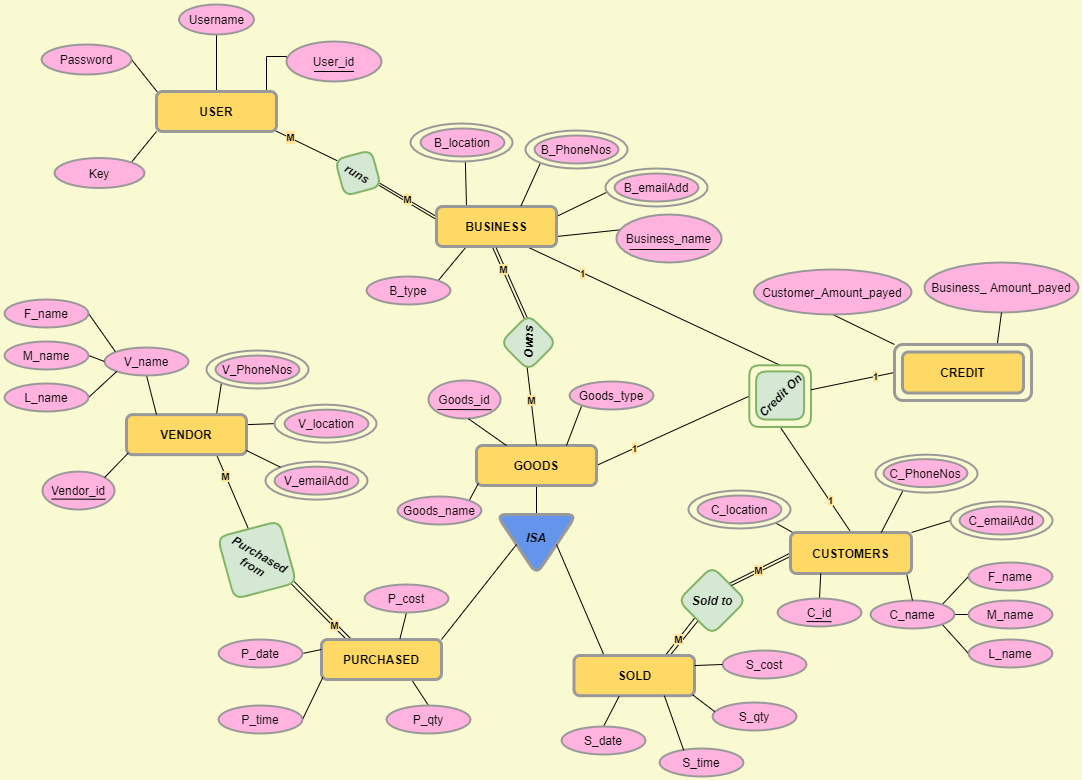
* **ER Model Version 1:**



* **ER Model Version 2:**

****

* **ER Model Version 3:**

****