





# CSE3103 : Database

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# Participation Constraints:

- The symbols that are representing participating constraints showing below:

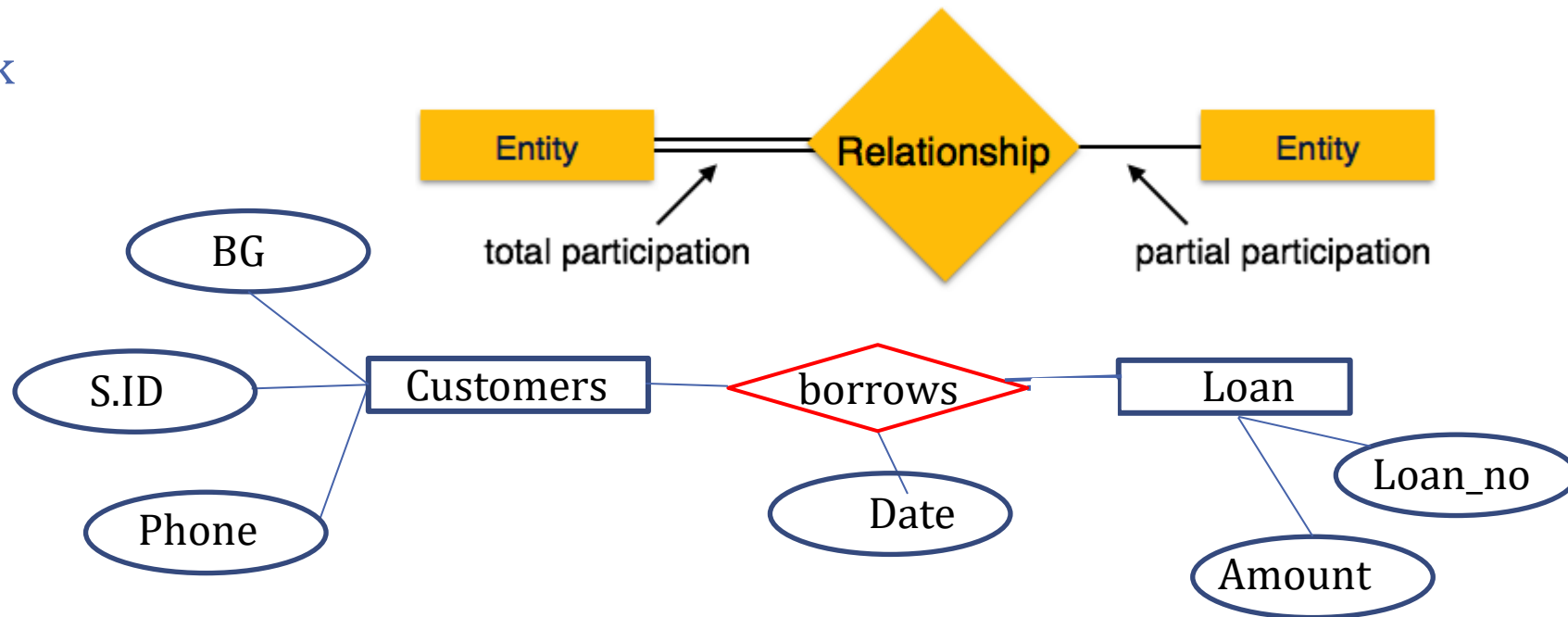
- Total Participation [ Double Line ]



- Partial Participation [ Single Line ]

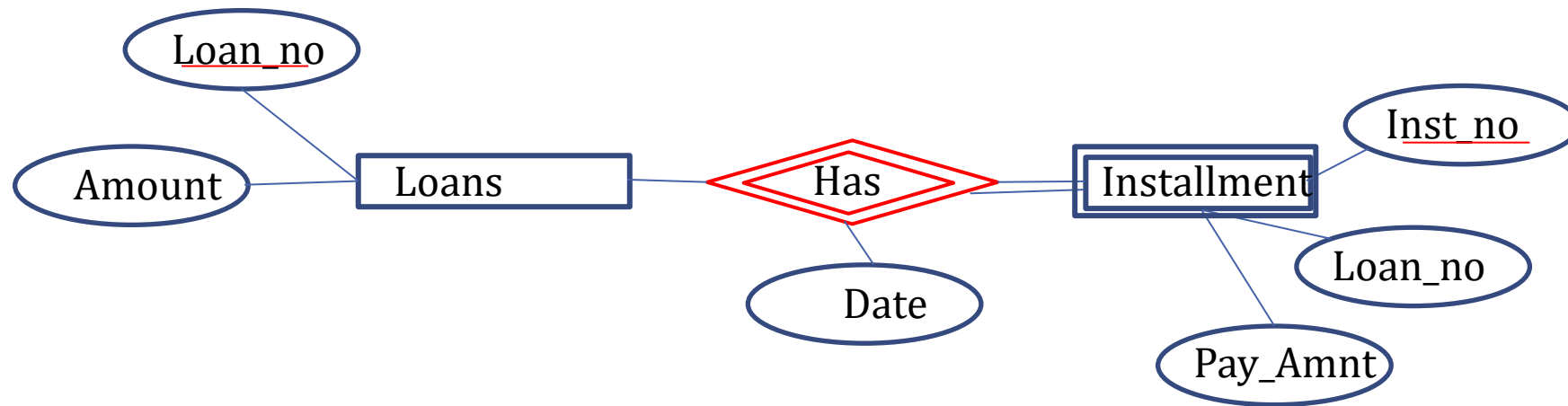


- Example: Bank



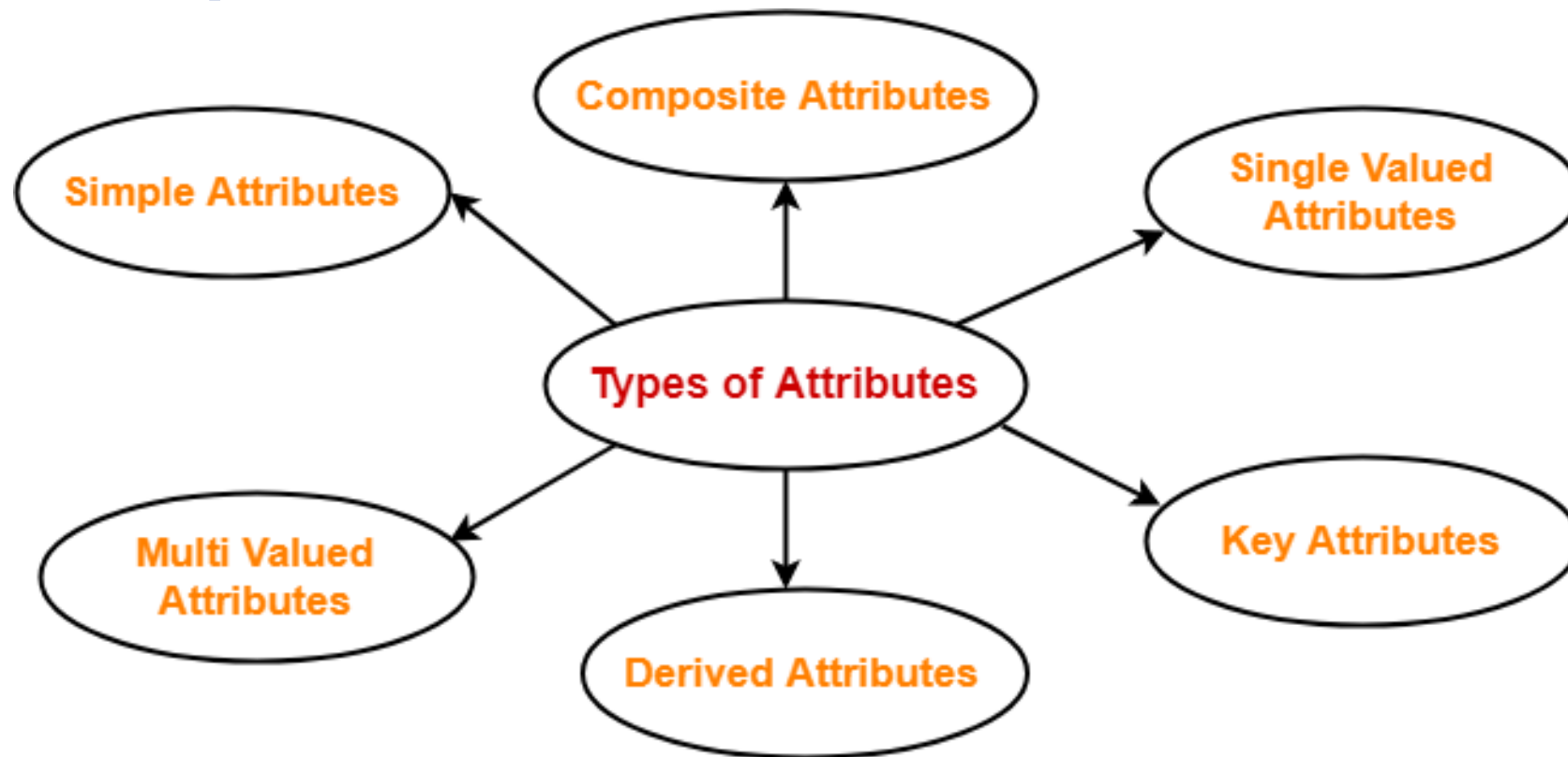
# Weak Entity Set:

- **One – To – Many relationship**
  - One side is dominant.
  - Many side is subordinate.
  - Subordinate side all the time depend on the dominant side.
  - Weak entity, identifying entity, discriminator.



# Attributes Types:

Simple and Composite



# Attributes Types:

- Single Value



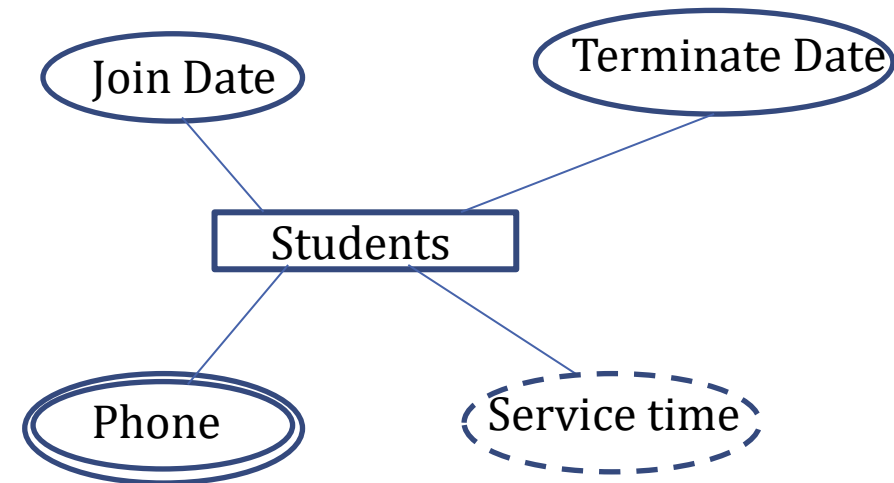
- Multi Value



- Null



- Derived

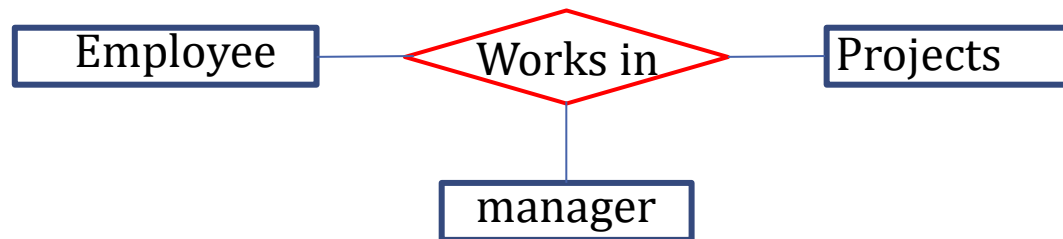


# Degree of relationship:

- Binary [ two entity connects with a single relationship]

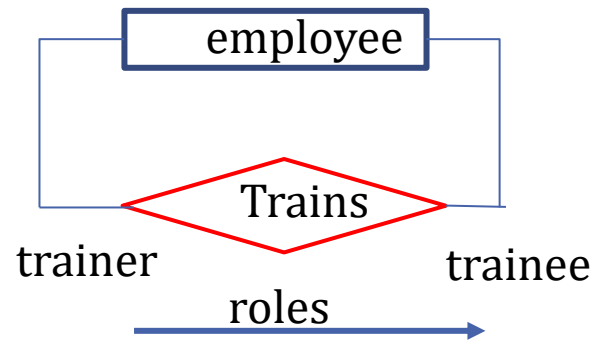


- Ternary [ three entity connects with a single relationship]

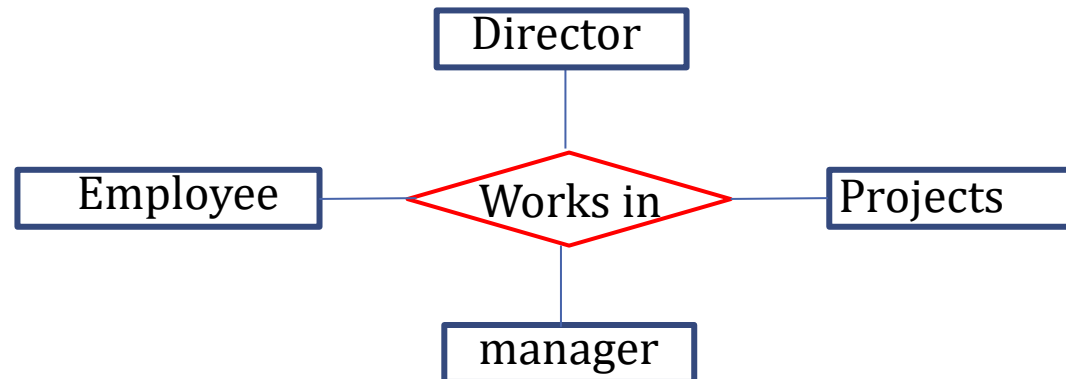


# Degree of relationship:

- Unary/Recursive [ Single entity connect with same relationship]

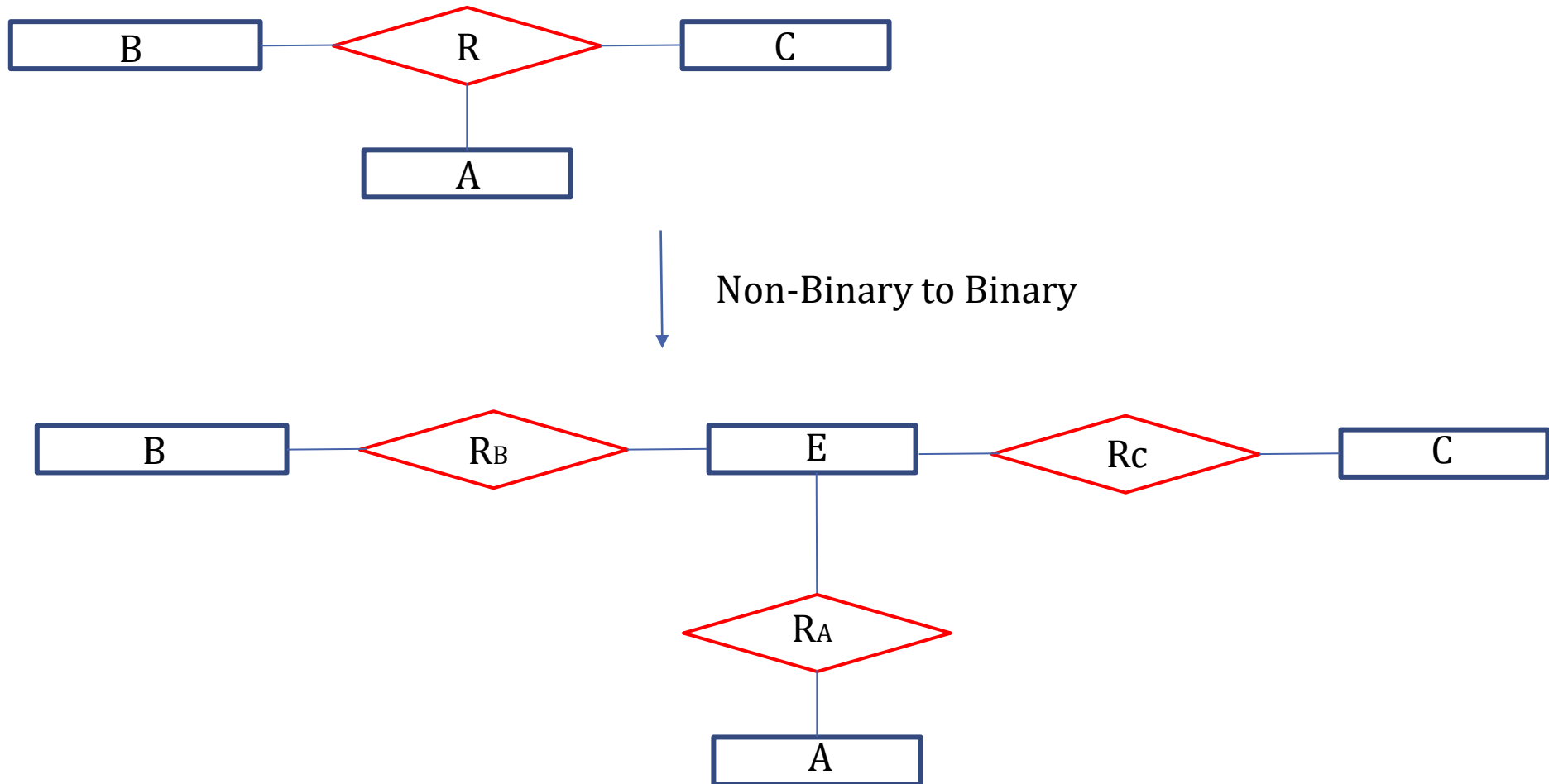


- N-ary [more than 3]





# Converting Non- Binary to Binary



# Practice on ERD

- Scenario:

BIRDEM is one of the high rated hospital in Bangladesh. Here, patients are firstly treated in a emergency ward by the doctors assigned to them. In some cases patients are transferred to the ICU unit if the situation is critical. Usually each patient will be assigned by a single doctor but in rare cases they will have two. Assistants also attend to the patients and a number of these assistants are associated with each patients. There are a number of nurses which are conducts with the patients. When the patient situation is stable they are shifted to the general ward or cabin according to the financial condition.

Draw an ERD with using proper symbol.

# Draw the ERD

- Possible Entity:

- Patients
- Doctors
- Nurses
- Assistants
- Emergency Ward
- ICU Unit
- General Ward
- Cabin

- Possible Relationship:

- Admit
- Transfer
- Assign
- Attend
- Conduct
- Shift

- Attributes

- Patients – p\_id, p\_name, age, sex, phone, BG
- Doctors – d\_id, d\_name, designation, dept.
- Nurses- n\_id, n\_name, dept.
- Assistants- a\_id, a\_name, designation, dept.
- Emergency Ward – w\_no, bed\_no
- ICU Unit – u\_no, bed\_no
- General Ward- g\_no, bed\_no
- Cabin –c\_no, bed\_no
- Admit- date , time, discount
- Transfer- date, time, ref
- Assign- records, prv.doc
- Attend-records, labs, tests
- Conduct – medicine, time
- Shift – date, condition

