**IS 441 Summer 2019 Class session 3 Summary**

**Recap ERD; Transformation of ERD to Relational Model**

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1. Recap ERD: Ternary and Unary Relationships

Ternary: The relationship needs all three of the entity types to participate – not any one entity instance, nor two entity instances (each is from a different entity type), can determine a specific relationship instance.

Example: VENDOR, PART, WAREHOUSE, relationship: Ship, attributes: Transportation\_Mode, and Cost. Not a single entity type can determine Mode or Cost; nor can two entities working together, such as VENDOR & PART, PART & WAREHOUSE, VENDOR & WAREHOUSE, can determine Mode or Cost. It must take ALL THREE – VENDOR, PART, WAREHOUSE – to determine Mode or Cost.

**Unary: Meaning – each row in a table may be related to a (some) different row(s). Note: a row related to different row(s)! No row can relate to itself!!**

1. Transformation of ERD to relational model

Regular entity types are mostly straightforward. One complex scenario: multivalued field.

Multivalued field: a new relation (table) must be created for the multivalued field, together with the primary key of the original relation (table).

EMPLOYEE

EID

LName

DOB

{Skill}

Example:

See the EMPLOYEE entity on the right where Skill is multivalued.

Treatment: Create a new relation (table), containing

* The multivalued field
* The original primary key
* Some other fields related to the multivalued field.

Example: The above scenario is transformed as follows:

EMPLOYEE

DOB

LName

EID

SKILL

Date\_Acqrd

Level

Skill

EID