CIND110 DATA ORGANIZATION FOR DATA ANALYSTS

ASSIGNMENT 1 REVERSE AND FORWARD ENGINEER A DATABASE

SECTION: DK0
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Part 2: Cardinality Ratios

EMPLOYEE \rightarrow DEPARTMENT has a 1:1 one-to-one cardinality ratio as only one employee can manage at most one department and a department can have at most one manager.

WORKS_ON \rightarrow PROJECT has a M:N many-to-many cardinality ratio as an employee can work on many projects and a project can have many multiple employees.

EMPLOYEE \rightarrow DEPENDENTS has a 1:N one-to-many cardinality ratio as one employee can have many dependents.

DEPARTMENT \rightarrow PROJECT has 1:N one-to-many cardinality ratio as one department can have many ongoing projects but a project cannot exist across many departments.

DEPARTMENT \rightarrow DEPT_LOCATIONS has a M:N many-to-many cardinality ratio as a department can have multiple locations and a location can have many departments there.

• Employee.Super.ssn → Employee.Ssn is a recursive/self-referencing relationship where Super.ssn will reference back to Ssn but also will have a 1:N one-to-many cardinality ratio as one supervisor can have many supervisees but a supervisee can only have one supervisor.

SUBMISSION PART 1:

See submitted file: CIND110_ASSIGNMENT1_AS_SQLSCRIPT.sql

SUBMISSION PART 2:

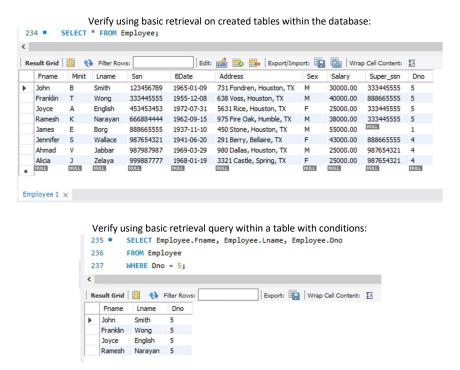
See submitted file: CIND110_ASSIGNMENT1_AS_MODEL.mwb See submitted file: CIND110_ASSIGNMENT1_AS_EERDiagram.PNG

SUBMISSION PART 3:

The submitted files successfully satisfy the context of Assignment 1 where the criteria of the four context points have been completed.

Given the schema outline of the existing data from a company, a relational database was created containing six different entities and their respective attributes. The SQL Script file describes the creation and migration of the logical data model to a physical data model.

After migrating the existing data into the new database, the entities with valuable features were enriched by applying entity and referential integrity constraints to ensure the consistency of any updates or modification to the data and to ensure key data inputs are not missing in the database. Basic retrieval queries on the database were performed to ensure and verify the new database is functional.



These relationships can also be visualized as seen in the EER diagram produced (see .PNG file for EER diagram). The EER diagram is a more dynamic visualization of the relationships between the entities within the database than the relational database schema originally provided in the assignment.

Therefore, submitted files have met the context of Assignment 1 by creating the foundation of a new database on a new platform and functional for data extraction and analyzing.