Lab 3

Entity Relationship Diagrams. Repository functions.

Consider the following situation describing the PHTRS:

A Work Crew consists of one or more work crew members, one of whom is a Work Crew manager. System needs to record Work Crew Member’s name, id, and their Work Crew number.

A pothole description includes a description of its location, and size.

More than one crew can be assigned to a pot hole repair. For each work crew a separate work order is created. The work order is updated when the work crew fills out a repair progress report.

Create an Entity-Relationship diagram depicting the following entities, their attributes and their relationships:

- Pot hole
  - Pothole number (Primary Key)
  - Pothole location
  - Pothole size

- Work Order
  - Work Order Number (Primary Key)
  - Pothole number (Foreign Key)
  - Work Crew Number (Foreign Key)
  - Work Order Status
  - Material Used
  - Cost of repair

- Work Crew
  - Work Crew number (Primary Key)
  - Work Crew Manager ID (Foreign Key)

- Work Crew Member
  - Person ID (Primary Key)
  - Person name
  - Work Crew Number (Foreign Key)

Lab Assignment:

1. Create an ERD and check that it does not contain any many-to-many relationships.
2. Enter Entity Attributes, specify primary and foreign keys.
3. Choose the **View-entity-attributes** in the Entity Display Options item of the View menu. That setting displays primary key, foreign key and attribute information with every entity.
4. Generate report on ALL entities, verify the key information from the generated report. Make sure only entities that are displayed on the diagram are stored in the repository. Delete any other entities.

5. Perform the following Repository Functions
   i. Key Analysis
   ii. Key Synchronization
   iii. Model Balancing

6. Enter the data fields of data stores on DFDs via selecting (Searching) appropriate data items (attributes of the ERD entities) from the repository – see 3. below

   Model Balancing should report no balance errors if every entity attribute is stored in some data store.

7. Generate a Repository Report showing all details of all data stores used in the project.

Notes on the Repository Functions.

1. Every diagram object gets recorded, even the items that are erased (deleted) from the diagrams.

2. To remove an object from the Repository – select it in repository, then delete it. Delete is only possible if object is not used on any diagram.

3. Searching the Repository: can traverse objects of a particular type by selecting Search Criteria and then Next-Prior

4. While adding attributes – do Search to retrieve the appropriate Data Items.