Assignment 1
ENSF 608 Winter 2023
Department of Electrical and Software Engineering
Schulich School of Engineering

Due : February 05, 2023 (11:59 PM)

The objective of this assignment is to apply your understanding of entity-relationship and enhanced entity-relationship modeling concepts.

Submission: This is an individual assignment. Your submission must be your own original work. Please upload your solution as a single PDF file to the 'Assignment#1' D2L dropbox folder. The dropbox folder only accepts one pdf file and will always keep the latest uploaded file and discard the previous versions.
Your solution may be handwritten or typed, and you may draw your diagram by hand or by using software tools. Handwritten work may be scanned or photographed but must be legible to be graded.

Weighting: This assignment is out of 25 marks and is worth 12.5% of your overall grade.

Question Narrative

Consider a MANUSCRIPT_REVIEW database in which researchers submit their research papers to be considered for presentation at the conference. Reviews by reviewers are recorded for use in the paper selection process. The database system caters primarily to reviewers who record answers to evaluation questions for each paper they review and make recommendations regarding whether to accept or reject the paper. The data requirements are summarized as follows:

- Authors of papers are uniquely identified by e-mail address. First and last names are also recorded.
- Each paper can be classified as short paper or full paper. Short papers present a smaller and more focused contribution than full papers and can benefit from the feedback resulting from early exposure. Short papers page limit is 3 to 6 pages and full papers page limit is 6 to 30 pages. Full papers can be review articles or original works, whereas short paper must be presenting an original work.
- Each paper is assigned a unique identifier by the system and is described by a title, abstract, and the name of the electronic file containing the paper.
- The system keeps track of the number of authors, number of pages, number of figures, number of tables, and number of references for each paper.
- A paper may have multiple authors, but only one of the authors is designated as the contact author.
- The papers will be classified into different conference topics. One paper can belong to more than one topic from the conference topics list.

- Reviewers of papers are uniquely identified by e-mail addresses. Each reviewer's first name, last name, phone number, affiliation, and topics of expertise are also recorded. The system keeps track of the total number of papers reviewed by a reviewer.
- A reviewer may also be author of papers submitted in the system. But a reviewer is not allowed to review the paper written by them.
- Each paper is assigned between two and four reviewers. A reviewer rates each paper assigned to them on a scale of 1 to 10 in four categories: technical merit, readability, originality, and relevance to the theme of the conference. Finally, each reviewer provides an overall recommendation regarding each paper. The detail rating of the paper is stored in the system and only the overall recommendation of the paper is sent to the author(s).
- Each review contains two types of written comments: one to be confidentially seen by the review committee only and the other as feedback to the author(s).

Assignment Questions

Based on the requirements narrative above, design and draw an EER diagram for the described application. Your solution must include the following:

Design Explanation (5 marks)

Explain your design process and state any assumptions that you have made. What decisions did you make and why? Include the following information:

- Choose one entity type and describe why its key attribute is unique.
- Choose one relationship and how it relates the participating entity types.
- Explain how at least one attribute can be derived from other attributes.

A 5/5 solution will be well-organized, clearly address all the points listed. The design explanation should be approximately half a page or less in length.

Technical Criteria (20 marks total)

(16 marks) Your EER diagram must include at least 70% of the following components (i.e. Of the 22 numbered components below, at least 16 different types of components should be identifiable in your model).

- Entities:
  1. Entity Type(s)
  2. Weak Entity Type(s)
- Relationships:
  3. Relationship Type(s)
  4. Identifying Relationship Type(s)
- Attributes:
  5. Simple Attribute(s)
  6. Key Attribute(s)
  7. Multivalued Attribute(s)
  8. Composite Attribute(s)
  9. Derived Attribute(s)
  10. Partial Key Attribute(s)

- Participation Constraints:
  11. Total Participation(s)
  12. Partial Participation(s)
- Cardinality Constraints (not Min/Max notation):
  13. 1:1 Cardinality(ies)
  14. 1:N Cardinality(ies)
  15. N:1 Cardinality(ies)
  16. M:N Cardinality(ies)
- Specialization/Generalization (with constraints shown)
  17. Disjoint & Total
  18. Disjoint & Partial
  19. Overlapping & Total
  20. Overlapping & Partial
- Attribute Inheritance
  21. Evidence that attributes are inherited, not duplicated
- Categories (Union Type)
  22. Union Type

- (1 mark) All key attributes must be identified
- (1 mark) Relationships should be marked with cardinality/participation constraints
- (1 mark)Specializations and generalizations should be marked with disjoint/ overlapping/ total/ partial constraints
- (1 mark) Your diagram must be clear, organized, and readable
- You may add any EER diagram components not listed above

Marks will be distributed as outlined above. Points will be taken off for inaccuracies in translating between the narrative and the EER model.