

IT 235 Milestone Two Guidelines and Rubric

Overview: Database design is an integral step in the overall development of a database solution; a bad design can lead to many issues and problems with queries and potential expansion for any database. Getting the database design right is the first and most important step in creating a successful database.

Prompt: In Milestone One, you read the [final project scenario](#) and then gathered the business requirements based on the goals, objectives, and user and business needs.

For this milestone, you will frame the entity relationship model (ERM) and define the entities and attributes for the business. Your next steps will be to normalize your entities, define primary and foreign keys, and finally, draft an initial entity-relationship diagram (ERD).

Specifically, the following **critical elements** must be addressed:

- II. **Conceptual Design:** Using your analysis of the provided scenario, address the following in order to determine an appropriate entity-relationship model (ERM) that will inform your final design:
 - A. Assess various ERMs for their **design applicability** to your database design.

Hint: In this section, define the process you have used, and note several considerations you have made in your choice of specific entities and attributes. Be sure to list the various entities and attributes that are of interest based on the scenario. Some entities and attributes may not ultimately be included in your initial or final design and ERD.
 - B. Determine the **appropriate ERM** and explain your choice.

Hint: Describe the appropriateness, reason, or basis for why certain entities and attributes would be included in your design and others would be left out.
 - C. Identify the **data sets** for the database, including all entities and attributes.

III. **Design Revision:** During this stage, you will draft your entity-relationship diagram (ERD), addressing the following elements:

- A. Construct your **ERD**, utilizing your identified entities and attributes.
- B. Determine appropriate **primary and foreign keys** for each entity and note them on your ERD.
- C. Determine **table relationships** and note them on your ERD.
- D. Determine appropriate **data types and sizes** for each attribute and note them on your ERD.
- E. Complete the **normalization process** utilizing dependency diagrams in order to prove tables are in third normal form (3NF), and adjust your ERD if necessary.

Hint: For each entity and table, complete dependency diagrams proving the table is in 3NF. If a table is in 3NF, only one diagram is needed; if it is not in 3NF, progress through the normalization process, breaking up tables as necessary. Additionally, revise your ERD based on the results of your normalization process.

Rubric

Guidelines for Submission: Submit assignment as a Word document with double spacing, 12-point Times New Roman font, and one-inch margins.

Critical Elements	Proficient (100%)	Needs Improvement (70%)	Not Evident (0%)	Value
Conceptual Design: Design Applicability	Assesses various ERMs for their design applicability to the database design	Assesses various ERMs for their design applicability to the database design, but assessment is cursory or illogical or contains inaccuracies	Does not assess various ERMs for their design applicability to the database design	5
Conceptual Design: Appropriate ERM	Determines the appropriate ERM and explains the choice	Determines an ERM and explains the choice, but determination is inappropriate, or explanation is cursory or illogical or contains inaccuracies	Does not determine an ERM or explain the choice	5

Conceptual Design: Data Sets	Identifies the data sets for the database, including all entities and attributes	Identifies the data sets for the database, but identification is incomplete, contains inaccuracies, or lacks inclusion of all entities and attributes	Does not identify the data sets for the database	15
Design Revision: ERD	Constructs the ERD, utilizing the identified entities and attributes	Constructs the ERD, but diagram is incomplete, contains inaccuracies, or lacks all the identified entities and attributes	Does not construct the ERD	15
Design Revision: Primary and Foreign Keys	Determines appropriate primary and foreign keys for each entity and notes them on the ERD	Determines primary or foreign keys for entities and notes them on the ERD, but determination is illogical or incomplete or contains inaccuracies, or notation is incomplete or contains inaccuracies	Does not determine primary and foreign keys or note them on the ERD	15
Design Revision: Table Relationships	Determines table relationships and notes them on the ERD	Determines table relationships and notes them on the ERD, but determination is illogical or incomplete or contains inaccuracies, or notation is incomplete or contains inaccuracies	Does not determine table relationships or notes them on the ERD	15
Design Revision: Data Types and Sizes	Determines appropriate data types and sizes for each attribute and notes them on the ERD	Determines data types or sizes for attributes and notes them on the ERD, but determination is illogical or incomplete or contains inaccuracies, or notation is incomplete or contains inaccuracies	Does not determine data types and sizes for attributes or note them on the ERD	10

Design Revision: Normalization Process	Completes the normalization process utilizing dependency diagrams in order to prove tables are in third normal form (3NF), and adjusts the ERD if necessary	Completes the normalization process utilizing dependency diagrams, but tables are not in 3NF, or ERD is inappropriately adjusted	Does not complete the normalization process utilizing dependency diagrams	10
Articulation of Response	Submission has no major errors related to citations, grammar, spelling, syntax, or organization	Submission has major errors related to citations, grammar, spelling, syntax, or organization that negatively impact readability and articulation of main ideas	Submission has critical errors related to citations, grammar, spelling, syntax, or organization that prevent understanding of ideas	10
Total				100%