CPSC 421: Class Project, Part #3
Due Tuesday, November 3

In this part of the project, your goal is to refine your initial ER model and translate it to a normalized relational schema. Be sure to carefully read and follow the instructions below.

Instructions:

Part I. Create a second (revised) version of an Entity-Relationship diagram for your application.

1. Create a revised list of entity types, attributes, and relationship types. Be sure to provide a 1–2 sentence description of each entity type and relationship type. Also note keys and cardinality constraints and explain attributes as needed.

2. Create an ER diagram for your revised entity types, attributes, and relationship types.

3. Based on your original project proposal, justify that your ER diagram captures the requirements of your application.

Part II. Generate a relational schema from your revised ER diagram in Part I.

4. List each relation, attribute, key, and foreign key.

5. Describe the domain of each attribute (i.e., the values that each attribute can take).

6. Justify the correctness of your translation.

Part III. Normalize your relational schema from Part II as needed.

7. List all of the non-trivial, non-key functional dependencies of your schema.

8. List any potential update anomalies that may exist in your schema.

9. Decompose your relations into BCNF (or 3NF) as needed.

10. For each relation in your final schema, justify why it is in BCNF (or 3NF).

Turn in a single PDF (preferred) or MS Word document with the above information using blackboard (digital drop box). Your document should clearly answer questions 1–11 above.