Operations on a database

1. *Database creation.*
   - Defining databases at the conceptual level.
     - Identifying object classes.
     - Identifying relationships between object classes.
     - Specifying constraints on object classes.
       * Domain (attribute) constraints.
       * Keys.
     - Specifying constraints between object classes.
       * Referential integrity constraints. (Foreign keys.)

2. *Populating a database.*
   - Loading data.
   - Insertion of data.
   - Deletion of data.
   - Modification of data.
   - Related topic: triggers.

3. *Queries.*
   (a) Queries on a single relation
       - Selection queries.
       - Projection queries. (Set versus bag semantics)
       - Aggregation queries.
       - Selection-projection-aggregation queries
   (b) Queries on multiple relations.
       - Join queries
       - Aggregation queries in this context.

4. Applications.
   - Reports.
   - Special purpose programs which include access to the database.