Projects	Group Database Projects
IT214 Database Management System, Autumn'2016, DA-IICT, Gandhinagar	

To get hands on, it is expected that you design and implement database system for a relatively large and real-life situation.

For project, you will work in groups, and permitted group size is 3 to 5 (not less, not more).

Project Evaluation Parameters:

1. Size and Complexity of Schema.
2. Realistic to the real-word
3. Complexity of queries answered
4. Goodness of the solutions

Project Milestones -

1. **Write a description of the scenario**. [Tentative Submission Date: First Week of September]
   There is no standard format for scenario description, idea is you must be able to state the scope of database, and capture all data requirements from the description. Sample scenario is being provided for your reference.

   Important Note: In order to identity scope of the database project; try to understand database in users perspective that what purpose this database will serve to the user, what questions of user, database will be able to answer, and so forth. Do not think in terms of table or entities.

2. Draw **ER Diagram** for the scenario [Tentative Submission Date: September end].
   ER diagram should include Cardinality and participation constraints. Use Ternary Relationship, Generalization/Specializations judiciously; use them only when you do not find any other way out.

   Use software Dia for creating ERDs. The software is in software folder in my lecture folder.

3. Create **relational schema diagram** from your ER diagram. Identify all Functional Dependencies in your Database and prove that all relations, you have created are in BCNF. If not in BCNF decompose it to bring in BCNF, if you cannot, then give reason, why you can't. [Tentative Submission Date: October Middle]

4. **Implement the database** as separate schema on the PostgreSQL server. Save DDL scripts for creating schema. You will have to submit schema diagram and DDL scripts of your project database. [Tentative Submission Date: October Middle]

5. **Retrieval queries on your project database**. You should include as many queries as your scenario may demand. I expect each scenario should have about 10-15 GOOD

queries. Test your queries on sample database (Populate your database with sample data through INSERT statements and save INSERT statements in a script file) [Tentative Submission Date: October End]

6. **Stored procedures and Triggers** in your project scenario. Identify some functionality and constraints that can be better accomplished by stored procedures and triggers. [Tentative Submission Date: November Middle]

7. Create a simple console based program (No GUI required) using embedded SQL in C that accesses your project database [Tentative Submission Date: November Middle]

8. Final document containing ERD and relational schema with normalization proofs. SQL statements of all the queries including DDL INSERT queries. Also submit code of your stored procedures and console application. [Tentative Submission Date: November Middle]

9. Final Presentation and Viva: Dates to be announced. For final viva and presentations, you are to bring hard copies as following –
    a. ERD (2 copies)
    b. Relational Schema Diagram (2 copies)
    c. Note: Relational schema should be atleast in 3NF; BCNF desirable.
    d. Set of FDs (no MVDs) normalization proofs. (1 copy).
    e. If any relation is not in BCNF, give reason why it could not be decomposed into BCNF
    f. SQL Scripts of SELECT queries (1 copy)
    g. Source Code of your stored procedures and console application. (1 copy)