Asian Institute of Technology
AT82.02 DMM
Group Work #1
Relational Database Design & Management Project

Theme: Transaction Database to Support Online Business Operation and Management

Goals

- Work in a team of 4-5 members. Each team must comprise members from both onsite and online students (with the ratio 2:2, 2:3 or 3:2), and having a minimum of 2 nationalities. So you can develop collaboration, team working, communication, time management, project management skills to some extent.
- A practical experience as a database analyst, designer and administrator.
- Apply database design principles to a real-world scenario of your choosing:
    - Gathering and capturing the necessary and practical requirements for designing and managing a Database System.
    - Modeling the data requirements using the ER conceptual model;
    - Producing a detailed relational database schema from the ER model and creating the data dictionary, SQL DDL to generate your schema;
    - Defining operational requirements for the applications and formulating SQL DML for those requirements consisting of important transactions, operations, inquiries and reports.
- Write up and present your results.

NOTE: Self-evaluation, peer-evaluation and whole-team-evaluation technique will be used, along with project rubric.

Theme: Transaction Database to Support Smart Online Business Operation and Management

- Project topic: **interesting** *a topic in a too well-known domain and does not lead to any new knowledge or study should be avoided.*
- Topics can be related to your interests.
- Sample topics:
    - Sharing economy services. Example: Uber, Airbnb, bike sharing, peer-to-peer online second hand store, peer-to-peer marketplace, peer-to-peer lending, etc.
    - Freelancer Platform (in-demand talent on demand) Example: Upwork.
    - Dropshipping Service.
    - Etc.

Milestones

- **Fri 4 Sep: Teams formation and Project Ideation**
  - Team Members: 4-5
  - Minimum 2 nationalities per team.
  - Combination of onsite and online students
  - Project ideation and details discussion:
    - project description;
    - details about the data to be collected and maintained;
    - insert, update, delete operations and transactions;
    - data inquiries and reports;

- **Wed 9 Sep: Submitting your INTERESTING Project Idea**
  - Submit a soft copy presentation identifying a project idea and data requirement (not more than 10 pages of slides:
    - Project description;
    - Describing data to be maintained, data constraints and business rules;
    - Identifying important insert, update, delete operations and transactions (min 10 operations);
    - Identifying important data inquiries and reports (which data must be included in the report and how the report would look like, min 20 inquiries + reports);
  - Make sure to include the following in your INTERESTING project idea:
    - what it is; explain important operations, transactions and reports;
    - why it is interesting and important to develop this database application;

- **Fri 11 Sep: Database Design and Database Development (Consultation Time During Lab hours)**
  - Perform database design:
    - Conceptual design
    - Relational database schema diagram
    - Data Dictionary (including Constraints design -- pk, unique, referential integrity (fk), check)
    - SQL DDL and Sample Database Population

      -- Make sure to have enough (mock) data inserted into corresponding tables to show meaningful query results.

      -- You can find some data from the Internet, or use mock data generator tool such as https://www.mockaroo.com/
  - Database development
    - Implement a set of queries, transactions and updates for your database
    - Transactions, errors and constraints checking, constraint violations

- **Fri 18 Sep: Online Presentation and Project File Submission (During Lab hours)**
  - Everyone will be assigned to be in an online ZOOM meeting room and should make a presentation / demonstration of your project (Max 15 minutes presentation + MAX 5 minutes Q&A).
  - Important: Every member will present the project, conceptual design, logical design, SQL implementation and demonstration!
  - Every presentation will be recorded.
  - Peer review / peer feedback will be used.
  - Submission (before class start):
    - Presentation file with project description, conceptual design, logical design, SQL implementation and results
    - An SQL file for DB creation and data population (for recreating a database with data)
    - An SQL file for all defined queries (for testing the queries)
    - Check List, Work Distribution and Team Member Contribution Form https://docs.google.com/document/d/1e_Wc3bSCeanOkNe-tosbrosu7AVHjRKABy8m1BosUeM/edit?usp=sharing