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|  | **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>