**CS3431-A24 Wong**

**Project 1**

**Due Date:** T 9-24 at 11:59pm. **No late submissions because I need to release solutions so students can start**

**Project Phase 2.**

**Teams:** The project is done in the same teams of two as in Assignment 4.

**Submission:** Make sure to include both of your names on the project submission. The ERD and relational schema is to be submitted in either Word or PDF format. The SQL code should be in a p1.sql file. Zip both files, name it Project1.zip and upload a single submission to the Project 1 link. Make sure to coordinate who is uploading the file and have the other team member confirm it has been uploaded BEFORE the deadline.

**Description**

In this phase you will be designing the ERD, the relational schema, and writing the SQL using Oracle SQL Developer or a similar IDE to create the database that software engineers might use to create an application for the South County Art Association (SCAA) in Rhode Island. The association’s biggest fundraising event of the year is the regionally well-known Great Art Heist. Artists donate artwork to the association for the exhibition and fundraising.

Customers buy tickets for the show and create a ranked list of the top works that they liked. The artwork is displayed for approximately one month and, on the final day of the art show, a drawing is held. Tickets are drawn and when someone is called, they get to take home their highest ranked art work that is remaining in the gallery.

In the creation of the tables use named constraints for primary keys and foreign keys. Do not use the ALTER TABLE statement to create the keys initially.

**Database Requirements**

1. Donated artworks include the year of the Great Art Heist Exhibit, the artist who created it, a title, the medium that was used to make it (acrylic, oil or watercolor), the location where it is in the exhibit, and the regular retail price. Artworks are assigned a unique number ID consisting of an integer starting with the number one and up to the number of items in the Art Heist event. There are fewer than 1000 items in the event.
2. The art association community consists of several types of participants - artists, customers, and members. Each person has a unique email address, a full name that consists of a first name and last name, a city, and a state. There are other types of participants in the art association community that are NOT represented in the system such as teachers and vendors. Participant can be a combination of artists, customers, and members, or none of them.
   1. A customer can purchase tickets to the Great Art Heist. There is a field with the values Y or N to indicate if they have purchased tickets to a past Great Art Heist event or not.
   2. An artist can donate artworks to the Great Art Heist. There is a calculated field indicating the total number of artworks they have donated.
   3. A member of the SCAA has a unique memberID, the member level (individual, family, or supporting), the year they joined, and the most recent year they were or are a member.
3. To reduce the amount of time each customer takes in finding their chosen artwork during the Great Art Heist event, the locations of the SCAA’s building consist of a room and the number of the wall. The combination of the room name and wall number is unique. The room names are Main, Side, and Annex. Each room has walls numbered from 1 to 4, except for the Annex, which has a 5th wall.
4. Tickets have a unique ticketID, and the year of the event. Customers can purchase tickets. A single ticket is purchased by only one customer.
5. Customers rank in order their most desired items starting with number 1. No ties are permitted. Ranks cannot have null values. An artwork may appear on many participants’ lists.
6. During the Great Art Heist event, the system keeps track of the order in which the artwork was chosen, which ticket wound up winning it, and which artwork it was. A ticket can only win a single artwork and an artwork can only be won by a single ticket.

**Instructions:**

1. Design a conceptual ERD that captures the above database requirements. Follow the notations given in the course slides, and follow the given guidelines for Good Design in the PowerPoint slides. State any assumptions that you make in addition to the above requirements.
2. Take your conceptual ERD and create the relational schema. You need to follow the rules that convert the conceptual ERD to a relational schema. Use PK, FK, and UQ for primary, foreign, and candidate keys. If an attribute is more than one type of key indicate all the types sequentially, for example, customerID PK FK. You do NOT have to indicate the references between the tables but use the same names between primary and foreign keys.
3. Take the relational schema and create the database. Put the following SQL code in a file named p1.sql:
   1. Use the following guidelines in writing your code:

The naming scheme (important for grading purposes) for the primary key constraints is

Tablename\_attributename(s)\_PK

The naming scheme for the foreign key constraints is

Tablename\_attributename(s)\_FK

For inheritance, use ISA Method A from the slides and posted class examples – one table for each entity set. If fields are unspecified variable length characters, use varchar2(40) as the SQL data type. For unspecified ID fields or number fields, use number(5).

1. create tables along with their constraints using Oracle SQL Developer or JetBrains DataGrip. Make sure to read the requirements carefully (even word-by-word!). To work as a team, you may want to use Git or a shared text document on Google to collaborate on your code.
2. create fictitious data to enter into the tables for the Great Art Heist 2025 (see in the next part how to do this quickly). Use the year 2025 because I will be supplying actual data from this year and previous years for Project Phase Part 2.
   * 1. at least 25 artworks that are a combination of acrylic, oil, or watercolor (see spreadsheet)
     2. at least 20 participants, of which 15 are customers, 10 are members and 10 are artists. Include overlapping types of participants.
     3. at least 5 customers who purchased tickets and created their ranked lists of 10 or more items. At least 2 of the customers purchased more than one ticket.
     4. the single table that contains which participants won which items of the 25 artworks
     5. photos of the artwork are not incorporated into our system!
3. A quick and easy way to do enter all this data is to
   * 1. Create spreadsheet data to conform to your relational schema similar to those in the assignments.
     2. Use Oracle SQL Developer or JetBrains DataGrip to import your spreadsheet data into the Oracle database (import video of Module R 9-19). Make certain that you specify constraints, data types and data type lengths as part of the import! Save the resulting SQL commands in p1.sql.

I am attaching a spreadsheet of data from this year’s Art Heist, strictly as an example, to assist you with the creation of your sample data for your tables. Note that the data is in a spreadsheet form that **does not translate directly** into what is needed by our system above! However, you will find it useful in creating your list of artists and artworks.