**~Spring 2018a~**

**CST363 Introduction to Database Systems**

**Class project**



**Part 1: Project description (100 points)**

Note: at least three tables are required in this project

In this project, you are to apply what we have learned to design and implement a database system for an organization/company of your choice, it could be a library, restaurant, car repair shop, pet clinic etc. In the first part of the project, you are required to:

1. provide a summary of the scope of your project: brief description of the organization, information needs and questions that need to be addressed, and the purpose of your database system.

The project is a small customer purchase, award, and reward tracking system. It takes customer data including basic name, email, phone info, provides for quick lookups while completing a transaction. The system can take transaction information and record point-based awards for a variety of reasons in response to the transactions, or birthday, or whatever. Using the award points will generate a negative record in the award table and a positive record in the reward. The summary table is also updated to reflect current amounts.

The basic elements are:

* customer lookup
* customer transaction statement
* customer award statement
* tracking of customer rewards (awards used)
* awards could be given for any reason
* awards will all be in points

1. draw ER diagram

In pdf

1. check the ER diagram for normal form. Modify the design to normalize it, or explain why it is better to keep an unnormalized design.

DB follows 3rd normal form using relationships for data where needed. The customer table has all related information in the table because these values are all queried together when doing lookups to find customers by either phone or email. The customer id pk value generated in this table is a fk relationship in the other tables.

The award table has fk relationships to the customer table, the transaction table, and the award type table. These relationships could easily have been extracted to another table but this is a low volume table and this will be well indexed.

1. Submit a single PDF file for part 1.

**Part 2: Final project Implementation (100 points)**

In the second deliverable of the project, you are to apply what we have learned to design and implement a database system for an organization/company of your choice. At least three sql scripts are required to turn in, one to set up tables (add primary key and foreign key), one for adding data to tables, and the third one for queries. Please note that if you prefer to turn in multiple script files for queries, that is okay too. Your database should provide the following functions:

* Interaction with users
* performing queries from multiple tables (JOINS or SUBSELECTS). You should have at least 5 queries (select statements). Write a short description of what the function of the select is, and then the sql select statement.
* VIEWS - you must define at least one view. What is the function of the view and write the view definition.
* Use SQL comments in the scripts for short descriptions of the queries and the purpose of the view.
* submit multiple script files ( a zip file containing the scripts is OK). The create table and views script , load data script and queries script.

**Project expectations:**

You will be evaluated against the following criteria:

* The database is well designed
  + tables meet entity integrity and referential integrity
  + all tables satisfy the third normal forms
* Queries of database provide answers for practical questions

This is a group project. Names of all team members must be listed on the cover page of the report even though the turned in report is identical among team members; everyone needs to turn in a copy for grading purpose.

**Extra Credit: (15 points)**

Define a stored procedure, a trigger, or wite a php program that would be used along with your database design.

Submit one file containing the procedure definition, trigger or php souce code. Use sql or php comments to describe the purpose and function of your program.