CSCI 135: Scalable Software Architecture

Claremont McKenna College

Prof. Mariam Salloum March 6, 2018

Problem Set 4

1 Instructions

Create a folder on your computer named **ps4_lastnamefirstname**. You will include all files required for this assignment in this folder. When you are ready to turn-in your assignment, you will compress (ZIP UP) your folder and submit the ZIP file to the 'Assignments' area on Sakai.

2 Girl Scout Cookies (GSC)

You will improve the GSC (Girl Scout Cookie) example given in class and extended in HW3 to include a database component that will save the order information.

1. Add a database to the backend
   (a) Add a database called 'GSC'. Create a file called **gsc.sql** and include the DDL statements to create the tables/relations, their attributes and constraints.
   (b) Consider the database relations that are needed and what sort of attributes are required for each relation. See sample ER diagram (Figure 1) but you can design your database as you see fit and add additional tables if you feel its necessary.
   (c) When a new order is submitted, then create entries in the appropriate relation(s) to record the purchase. You don't need to worry about creating the relations before a customer submits an order. Note, if a customer is already in the database, then be sure to not to add a duplicate entry in the Customer table.
2. Add a page called reports.php
   (a) This page will provide a summary report by querying the database using PHP.
   (b) The report should display the results of the following queries:
      i. List the name of the girl scout that has refereed the most customers.
      ii. List the name of the customer that has made the most orders.
      iii. List the name of the customer that has ordered the most cookies. Note, this query is a bit different from the previous query as we are counting cookies not orders.
      iv. What is the most popular cookie type? i.e. you will need to look at all orders, and the quantities of the cookies in the order.
   (c) I would recommend you first write these queries and test them in the gsc.sql file before incorporating the queries as part of reports.php.
   (d) The reports.php MUST use PDO to execute the queries. Also, your code must protect against common SQL injection attacks.

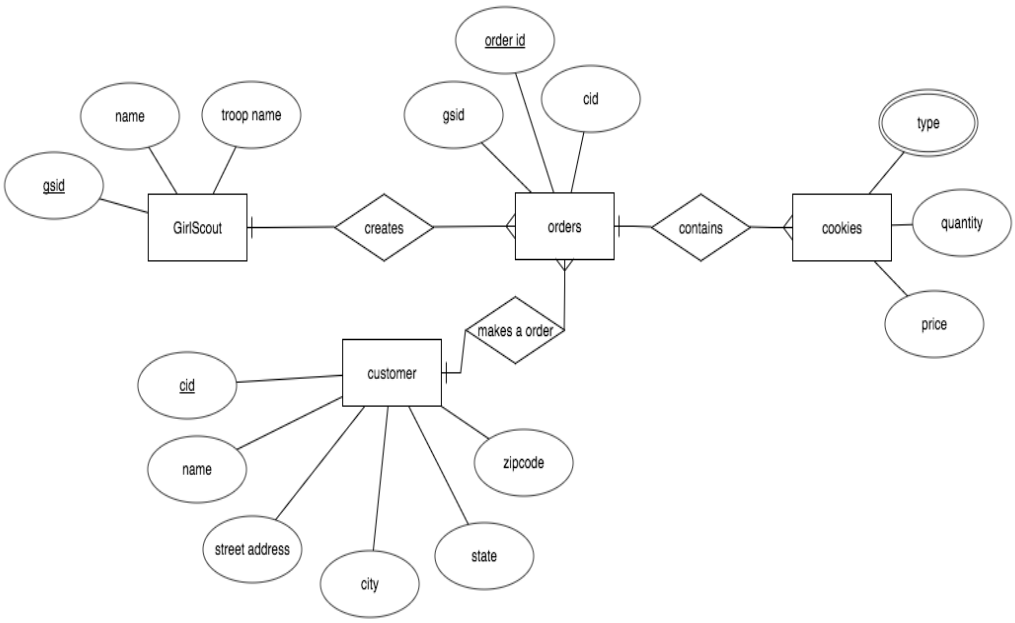

Figure 1: Sample ER Diagram