# Computer Science: Mason H.S. – Term Project

**Mason H.S. – Term Project – Books, Ratings, Suggestions, and More!**

**Term Project Description: The basic idea**

In this activity, you will design an online database and product rating system as found on Indigo.ca or Amazon.com. This handout always refers to the products in your database as *books* but your own implementation could be about another category of products such as music, movies, games, restaurants, favourite foods, TV shows, etc.

Your program will manage a set of customers and a set of books. Customers will rate individual books and the program will be able to produce statistics about a given book such as the number of ratings or the average rating. Of course**,** a given customer probably hasn't read all the books in the database and so will only have ratings for some of them. All the data will be saved between runs of your program so that the same customer can connect multiple times and add more ratings.

Customers will have a unique name and you might also decide to implement customer passwords. You should be able to add new customers to the system at any time. For each customer, the program needs to keep the rating for each book that the customer has rated thus far. Think carefully about an appropriate rating system. A returning customer may reconnect to the system and rate more books or change past ratings.

For each product, your program will store the relevant identifying information such as author and title (if the product is books) or the appropriate information for the product that you have chosen. It is recommended that (at least initially) you work with a fixed number of books.

**Making predictions about suggested books a customer might read**

When you connect with many online stores and make purchases, the system suggests other products you might like. This feature is often available at Indigo.ca when searching for a book. The page contains information such as “other customers who bought this item also bought …” The better your website is at making predictions that actually match the customer’s real taste, the happier your customer will be and the more they likely they are to trust your recommendations.

You should consider the complexity of the prediction algorithm, which can range from simple comparisons to complex statistical models. Talk to your teacher about the most appropriate challenge for you.

**Project Options or Differentiated Instruction Opportunities:**

*(Note to teacher - Below is a list of other items you may wish to include for some or all class members depending on the students. The list may also give ideas about how to modify the program for the next semester or year.)*

* Add administrator access to admit new customers with assigned passwords. The administrator may have the ability to request overall statistics about the system.
* Allow a customer to add new books to the system. Notice that this complicates the prediction because customers who were added before the latest books were released will not have ratings for these books. This is not difficult to handle but necessary to address.
* You might want to consider an efficient way for the program to produce a summary of the ratings for a particular book.
* Implement the database in a database package such as MYSQL.
* Use data files provided by the teacher which already contain a large number of ratings for a fixed set of products.
* Make suggestions for online friendships that are based on the similarity between two customers’ ratings.