Target Dates:

Note: UNCG will be closed Mar. 12 to Mar. 19, 2017 (Spring break). Test 2 will be on Wed. Mar. 29, 2017. Test 3 will be on Mon. May. 1, 2017.

In this project, you will design and implement a database application. You will work in groups (teams). Each team will have three members. Each member should participate in ALL activities of the project: Design, implementation, and demonstration. The project is carried out in several main steps:

1. Conceptual design using the E-R model, Translation of the E-R model into the relational model.
2. Refinement of the design (into at least 3NF schemes, preferably BCNF or 4NF schemas).
3. Partial Implementation: Creation of some database tables, data entry, design and implementation of 4 queries and transactions, and Web-based interface design.
4. Complete Implementation: Creation of all database tables, data entry, design and implementation of all queries and transactions, and Web-based interface design. Each team should submit a final report, and demonstrate the project online.

Your final report should contain:
(1) The final ER design,
(2) The final relational design, including listing of all tables (schemas), keys, and data dependencies,
(3) Data (current at demo time – print all tables),
(4) Queries and application programs. 
(5) You should also indicate, for each member of the group, which parts/tasks were implemented by that member.

Each team will demonstrate their project online. All members of the team should be present at the time of demonstration.

Your system should be easy to use. I should be able to check your project by going to the home page of your system.

THE PROBLEM:
You will design and implement an online computer store (called 671Computers). Your database system should keep track of laptops and tablets, and available memory options, customer information (name, address, etc), customer orders, accounting, and status of orders.

Some of the transactions and queries for this system are listed below.
Customers’ Queries and Transactions

1. Search. The result of search should be a listing of systems with all relevant information such as configuration details and price.
   - Search by price (less than or equal to a price specified by user).
   - Search by weight (less than or equal to a weight specified by user).
   - Size \textit{e.g.}, 14 inch.
   - Type: Laptop, tablet, hybrid.
   - Multi-criteria search \textit{e.g.}, price and weight).

2. System configuration: The result of search is a list of base systems, including processor, operating system, base memory, base disk capacity, weight, and size. Users must be able to easily specify larger memory and larger disk capacity, as well as solid state drive. Your system should provide updated price for the desired configuration.

3. Purchase. Customer selects a configuration to purchase. The system asks for information (customer name, address, credit-card number, etc...) and records the purchase.

4. Wish list. Customer can add a configuration to her/his wish list.


Administrators’ Transactions and queries

1. Enter information for a new base system.

2. Specify options (such as available memory upgrades) for each base system – including the added price for each option.

3. Update information regarding an existing system.

4. Process a purchase (the number of available systems in the inventory should be decremented, the status of purchase changed to “processed”.) If purchase was for a system in the wish list, the system should be removed from the wish list.

5. Information listing. For example
   - Complete list of purchases during a given period of time (given by start date and end date).
   - Total sales (dollar amount) for a given month and year.

Additional Transactions and queries

1. Statistical data: Best sellers; systems that are not selling; etc...