Emerson Ecologics

**Technical Audition**

Please prepare a solution to the problem described here.  Please arrive ready to present your solution to a panel of 3-4 interviewers. Once you have presented your solution, the interviewers will ask questions and provide additional requirements that you will have to incorporate into your design on the fly. This process gives us a chance to see how you solve problems, how advanced your design skills are, how well you present to a group, and how well you think on your feet. The technical audition will last approximately one hour.

**Shopping Cart System**

Please design a shopping cart system that will satisfy the following requirements. The shopping cart will be used in shopping websites and will provide the ability to

* Add items to the cart
* Remove items from the cart
* List items in the cart
* Clear the cart
* Calculate total cost of items in the cart
* Calculate sales tax on items in the cart
* Apply discount to an item in the cart
* Apply buy one get one free discount
* Apply different sales tax rate based on the buyer’s geographical state
* Create diagrams and other design artifacts to

- help explain the overall architecture of the system.

- show primary classes, data structures, and data storage.

- show how your various components interact (for a few use cases.)

* Show sample code for **a few** key classes/methods.
* Show samples of **a few** key data access procedures.
* Show why / how the above samples of your code can be easily tested.