1. Use of at least three Abstract Data Types
   1. Queue for multiple items ordered.
   2. **We need two more.**
2. Use of inheritance and polymorphism
   1. Parent class fruit
   2. Child class apple
   3. **We need ideas on how to use polymorphism.**

3. Use of recursion

a. Calculate the amount of change

4. Connection and use of a simple database?? **I have emailed him to elaborate on this. EDIT: still no response…**

5. At least one sorting algorithm

a. Sort the items by price. **Need to give this more thought. This could make things worse by changing the order of the item numbers. Like A2. A1. A3.**

6. At least one search algorithm

a. Search for item number. **Again I don’t know what search I would use.**

7. Use of a graphical user interface

a. Create 5 number buttons 1-5

b. Create 5 letter buttons A-E

c. Create text field for current input

d. Create text field for current order, include prices.

e. Create plenty of food items.

f. Create a text field for the amount of money the user is entering.

g. Create an enter button that stores the order in a queue. Search algorithm to locate based on item number (letter, number) **Working on this right now, not sure if I should search before or after I add it to a queue. I also don’t know which search to even use :/**

Create a vending machine that has a panel where the user can enter both letters and numbers to create an order. The letters will be the column and the numbers will be the rows. Use a queue to store the order and process which was first. Create edible items to store in the vending machine. Use inheritance for certain types of food. Fruit, candy, etc every item needs a price, and an item-number. Let the user enter the amount of money that they have, and use recursion to return change in as few coins as possible.

11/30/2016

**First enter an item number.**

**Search a list of items by their ItemNumber for that item number**

**Put that item(skittles for example) into a que(CurrentOrders)**

**When you hit vend and they have entered enough money, it will cash them out in a fifo order. The change making process will use recursion.**

**Make a delete button using a stack (JEREMY)**

I’ve made an inventory of 9 items. I’m also pretty sure I have done something similar to making change using recursion before.