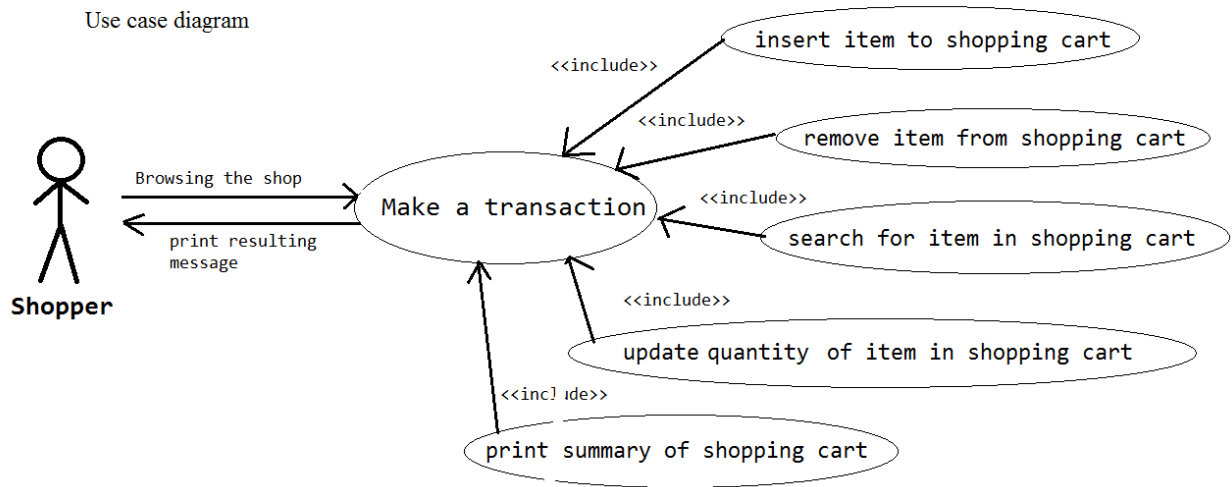
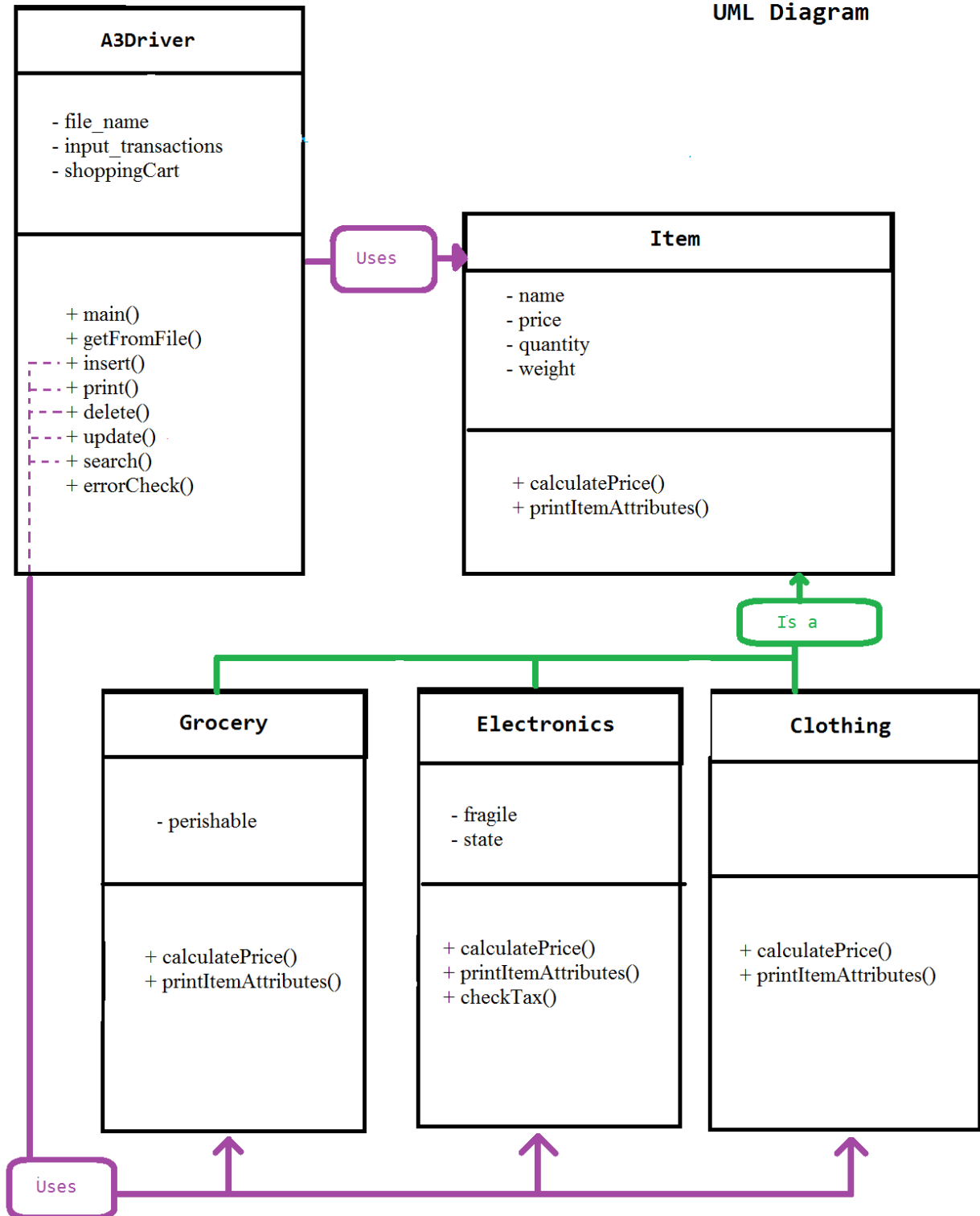


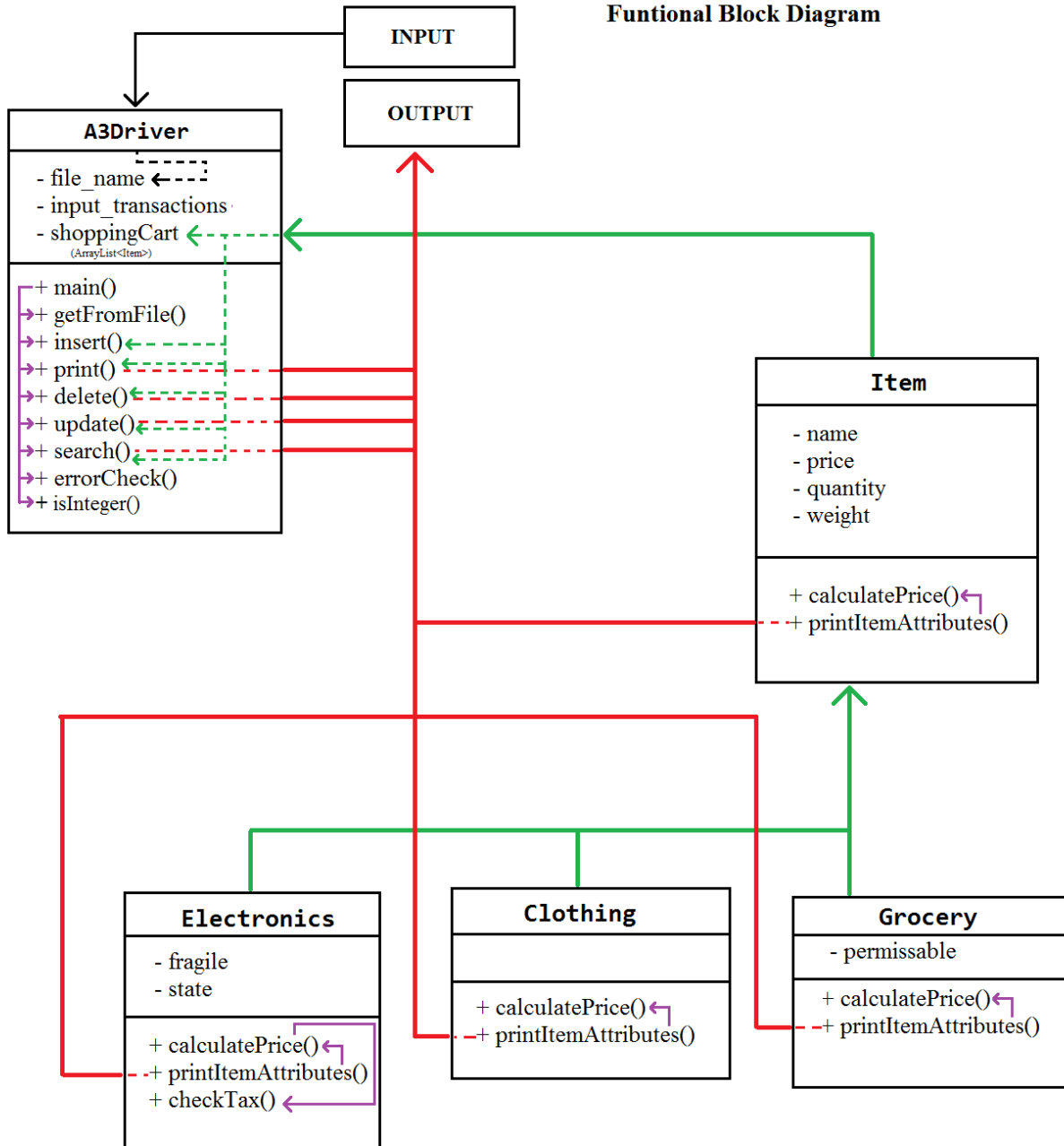
Use case diagram



UML Diagram



Funtional Block Diagram



ADT Level Description

- A3Driver Class
 - Methods
 - Main: takes the input argument and splits it up into individual tokens in an array. Calls Errorcheck method to check for any errors in the input transaction, then calls one of insert, search, delete, update, or print based on the transaction type.
 - getFromFile: Reads through the input file and converts each line into an array of Strings. The output of the method as an ArrayList input list in which each element is a String. For assignment 3 each element is a transaction.
 - isInteger: checks if the string is an integer and returns true or false
 - errorCheck: checks a transaction to make sure it is valid by checking each part of it using the tokens array. Returns true or false.
 - Insert: parses through the tokens array and processes the input transaction
 - Print: parses through the tokens array and processes the print transaction
 - Update: parses through the tokens array and processes the update transaction
 - Returns the number of updated items
 - Search: parses through the tokens array and processes the search transaction
 - Delete: parses through the tokens array and processes the delete transaction
- Item class
 - Attributes
 - Name
 - Price
 - Quantity
 - Weight
 - Methods
 - Constructor
 - calculatePrice
 - printItemAttributes
 - compareTo
- Clothing class
 - Attributes
 - Shipping
 - Tax
 - Methods
 - Constructor
 - calculatePrice
- Electronics Class
 - Attributes
 - Fragile
 - State
 - Shipping
 - Tax
 - Methods
 - Constructor

- CalculatePrice
 - checkTax
- Grocery class
 - Attributes
 - Perishable
 - Shipping
 - Tax
 - Methods
 - Constructor
 - calculatePrice

Driver Algorithm

The A3Driver takes the input file and places it in an ArrayList called input_transactions. Then it will iterate through the list of transactions using an Iterator. Next, it will separate each transaction as it comes through into an array of tokens called tokens which will contain each individual part of a string in each index of the array. Then it will call the errorCheck method to check if the input transaction has any errors. If it doesn't, it will then call the insert, search, delete, update, or print method based on the transaction type. If it does, it will print "Invalid transaction".

Analysis – Program 3

We will have five different classes in our solution. The A3Driver, Clothing, Electronics, Grocery, and Item class. The Item class will implement Comparable<Item> in order for us to sort the multiple items in our shopping cart. The Clothing, electronics, and grocery class will be subclasses of the item class because they are types of items. (is-a relationship) The A3Driver algorithm will split the input string into individual tokens in an array and then parse it. The Clothing, electronics, and grocery classes will all have its respective constructor as well as a way to calculate the final price based on shipping and tax.

Questions:

What kind of attributes are important enough to be printed? Should there be a summary after the last transaction? What if there are multiple input files? Can multiple items have the same exact name? Wouldn't this make update not affect certain duplicate items? Could a class be made for the Shopping Cart to increase the modularity, or is making an ArrayList of Items better overall? Are there methods in the ArrayList class to help organize the items?