

Zack Salah  
CS 202  
Program 4

#### Design changes

During the implementation program four, I tried to think about the design while programming. Even Though it was given to us within the homework assignment. I have implemented way more functionality then needed to experience the power Dynamic binding in java. It is truly marvelous.

Surprisingly, my design didn't change at all during the implementation of fourth program. In my design, I had most of classes with "Has a" relationship and only few classes has a "Is a" relationship. I hated that this program has more "Has a" than "Is a" relationship. I thought I understood the inheritance concept, but this program is bothersome for me. Even though my design is bad, If had time I would have changed some aspects. Overall the design is alright.

#### strategy approach

I have given a lot of thought to the strategy and algorithm of implementing the Pizza class which has the mandatory and nonmandatory toppings. I have to connect the program in such a way that it can communicate with all of the classes correctly. If I had time, I would have found a way to have a faster way to do the same operations and minimal redundancy of code. The abstract base class I has a couple of virtual function most of these function does not have their implementation. it's like the program 2 most function are wrappers for the recursive version in the abstract base class. I would have implemented more classes and more functions but time is tight. I had to wrap up what I got to submit. This is difficult for me because I tend to delay my self from finish early to make the program perfect.

#### possible changes

In the program, I used one kind of data structures. I used two double linked list to store the orders for the user and and the topping that the user have. Each doubly node in the user class have an array of pizzas. If I had the leeway to use whatever data structure I would have used a linear linked list and a double linked list for the pizzas. This would make more sense for this current assignment.

#### IDE

Even though the IDE is very helpful, it's bothersome at the same time. Because i have to learn everything about it. While the editor like vim and the command line were very natural for me. I hate that I have learn everything from scratch. But the one thing I definitely liked is that all the java function have auto fill which is very helpful. It also help find function easily like Bufferedreader and other functions like equal and ToCompare. Its definitely something will miss going back to the command line with C++.