ASE Report – Jack Rome

The program initializes by loading the menu items from a file and populating a Menu object with this data as MenuItem objects. The user is then able to create orders via the GUI, which displays all of the descriptions, prices, etc. of the items. While the user is creating their orders, data regarding those orders is printed to the console. When the user has completed their orders, they can choose to view a report.

Classes - Order Class

The order class is created to store the data in the customer’s orders. The order class features two constructor methods. This is because the orders can be created from two different sources (from the GUI and from a file). When the orders are loaded from a file, they already have an ID and a timestamp, whereas, when an order is created from the GUI, a new timestamp and ID need to be created. The class is comparable and is implemented to be compared on alphabetical order of its ID.

The order class has methods to retrieve variables, create a timestamp and to calculate the total cost of the order. The total cost is calculated by iterating the MenuItem LinkedList and accumulating the item’s costs.

The ID and timestamp are implemented as Strings. The items included in an order are stored within a LinkedList of MenuItem objects. A LinkedList was chosen to be used as the data structure so that the orders can be of a dynamic length and easily iterated. All costs are stored using a java BigDecimal object. This is because a float did not provide a high level of accuracy after arithmetic operations were applied and so we switched to using the BigDecimal from float.

Testing - Discounts

The discount class is tested by ordering items from the menu that should trigger a discount. For example, there is a rule that ordering 3 Americano coffees will result in the third being free and another rule is that ordering 2 coffees will result in a Muffin being half price. To test this with Junit, the items were ordered to trigger the discounts and the price of the order was compared with a calculated prediction to ensure that it was correct before and after the discount is applied.