**Testing Report by Aditya Malik for Java Project 5**

Contact Class

The contact class consists of a constructor that takes in a contact name, number, and email address. It consists of the methods getName, setName, getPhoneNumber, setPhoneNumber, getEmailAddress, setEmailAddress. Along with this the class will override the toString method and place the contactName, number, and email in there. It also consists of a Boolean equals method that checks to see if two contacts are equal in all fields. Lastly, the comparator method compares two contacts by a “trait” or field.

Test

The test here was done by creating three new contacts and inputting name, numbers, and email addresses to them. The getName method is checked, the getPhoneNumber method is checked, and the getEmail method is checked in the next three lines. Then the set methods for name, phone number, and email are tested also following it. Then the test prints the strings using the toString methods. Again, the tests use the getName, getPhoneNumber, and getEmail nethods to access the values in the contact, and then print them via toString method. Lastly, the comparator method is tested to see if two contacts are equal to each other.

ContactDatabase Class

The contactDatabase class consists of two methods, the main method and the printList method. The printList method will print the contacts in a list, while the main method is what is used to test the database.

Test

The test creates a new linkedList and a new Contact to use in the tests. Then the add method is tested by adding the tested contact into the linked list. Then the printList method is used next to print out the contents in the linked list.

Database Class

The Database class consists of a node and a hashtable and these are used for the following methods. It consists of an add method that adds an element to the node, a delete element that deletes an element from the node, and lookupInList element that finds the matched input value, and lookupInIndex method that returns a linkedlist that contains all elements of the database that match the input value, makeIndex method that creates the arraylist and sorts it, the loopup method that finds if there exists an index in the hashtable that matches the key trait, and lastly the getList method that returns the index of the trait in the hashtable or calls the makeIndex method.

Test

To test this class, first a new database is created called test. Then a contact is created called testContact, and in it is inputted the name, number, and email address. Then the add method is tested by adding this test contact into the database and seeing if it resulted in what we wanted. Then the delete method is tested by deleting the contact containing the same name, number, and email address.

DatabaseType Class

The DatabaseType class is an interface that contains the method stub getComparatorByTrait. I do not know quite how to make a test for this since it is a method stub and not an actual method to test.

LLNode Class

The LLNode class is a class for the default node of a linked list that creates a node and consists of a constructor for an element and the next node. It has the getElement method that grabs the input element, the getNext method that returns the next node on the list, and the setNext method that sets the next node in the list. There was no test made for this since it is a default node class that is used many times over and over again.