Assignment1 GUI **README**

**Joshua Renelli (0344117)**

**Installing/Creating GUI**

To run the GUI you can either compile the source code for both Set.java and GUI.java and then run the GUI class as it has a main method inside itself that will create the GUI for you. If you would prefer to make it outside of the class, you can simply instantiate a GUI object using it’s default constructor.

**0.General Layout**

On the left hand side of the GUI you will see all of the tools needed to create/manipulate sets as well as using the required set functions and on the right side of the GUI is where the output area is located that will display all of the results from the testing.

**1. Creating a Set**

To create a set using the GUI you must click the “Create New Set” button on the main screen of the GUI. A screen will then popup where you enter the name of the set you wish to create, how large you think the set will be (it will resize itself if you reach the set length), and finally you choose which type you want to make it. *Although the Data Structure which I created allows for the use of any type because it uses generics, 3 types are available for demonstration purposes.*

Finally you click the “Create Set” button to create the Set using the parameters that you just gave it.

**2. Adding/Removing elements in a Set**

To add or remove an element from a set you must select the set which you created in step 1 by using the combo box to select the name that you gave the set. Once it is selected you can type the element which you wish to add or remove in the text input field above the add/remove buttons. Once you click add/remove it will be added/removed from the set. You can add multiple elements at once by separating the elements you are adding into the array with a comma (eg. 1,2,3,4).

**3. Outputing Set to Screen**

At any point you can select a set using the combo box that you also used to add or remove an element, and then simply click on the “Output set to screen” button.

**4.Finding Cardinality/Is an element in the set**

To determine the cardinality of a set you simply select the set using the combo box on the main GUI and then click on the “Cardinality” button. To determine if a given element is in the set or not, you simply enter the element which you wish to check in the textInputField and then click the “∈?” button and it will display on screen the answer.

**5.Using the Set Functions**

To use the Union/Intersection/Difference/Subset functions you must have at least 2 sets created. Then you simply click on the button on the main GUI associated to the one you want to find and then a new window will popup where you choose the two set’s that you wish to determine either of these functions for and the answer will display to screen