RIT | Golisano College of Computing and Information Sciences
School of Information

ISTE-121
Lab 10: Data Structures

Overview: Maps and Sets

You have been hired to do a proof of concept on a reservation system. You are managing reservations for widgets (meaning, you do not know what they are, and do not care). Each reservation consists of a confirmation #, a person's name, the widget name, and the date and time of the reservation.

The file RES_DATA.dat has the reservation database in it. This database has a series of records. Each record consists of:

Confirmation # (String)
Person's name (String)
A widget name (String)
A start time and date (String)

You are to read the entire RES_DATA.dat file into the program and store it in a map (HashMap or TreeMap, your choice). The key for each reservation in your map must be the confirmation #.

NOTE: The keySet for a map is a set. This may be of use to you below.

There is a starter, ReservationSystemStarter.java, in today's downloads. You will also need RES_DATA.dat (the actual data) and Reservation.java (a class that encapsulates one reservation).

Once a Reservation is displayed, it can be **canceled** (deleted from the map or set **and** cleared from the GUI's TextArea).

The user can **search** for a reservation by confirmation #. In fact, this **must** be done before canceling the reservation. This will cause the details of the reservation (if the confirmation exists) to be displayed in the fields below the Search button.

The Save button will do the opposite of reading the data in. It will save the reservations in the map to the RES_DATA.dat file.

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You need to:

- Declare your map as an attribute.
- Declare a constant String (RES_DATA.dat) for the file name.
- Implement the readData method.
    - Read in all the Reservations and store the Reservation in your map, using the confirmation number as the key.
- Implement the dispData method.
    - Iterate through the map and append the toString() for each Reservation to the TextArea.
- Implement the doSave method.
    - Iterate through the map and write the fields of each Reservation to the RES_DATA.dat file.
    - Close the window.
- Implement the doSearch method.
    - Check to see if the confirmation # in the Confirmation # field is a key in the map.
    - If so, display its information in the TextFields below the Search button.
    - If not, pop up an error message using an Alert.
- Implement the doCancel method.
    - Check to see if the confirmation # in the Conf # field is a key in the map.
    - If so, delete that key, value pair from the map and redisplay the reservations in the TextArea.
    - If not, pop up an error message using an Alert.

Zip all your *.java and *.dat files together as Lab10.zip and submit to the Lab10 Assignment folder when your code is working properly.