

Data Structure Review Activity

Create a project **dataStructureReview** with classes **DataStructure** and **Main**.
Copy the starter code below in the **DataStructure** class.

```
1 import java.util.ArrayList;
2 import java.util.HashMap;
3 import java.util.LinkedList;
4 import java.util.Queue;
5 import java.util.Stack;
6
7 public class DataStructure {
8     private ArrayList<String> studentList = new ArrayList<>(); // students' names
9     private int[] ageList = new int[3]; // students' ages
10    private HashMap<String, Double> majorGpaMap = new HashMap<>(); // keys: majors, values: gpas
11    private LinkedList<String> nationalityList = new LinkedList<>(); // students' nationalities
12    private Stack<String> hometownStack = new Stack<>(); // students' hometowns
13    private Queue<String> homeStateQueue = new LinkedList<>(); //
14
15    // add-an-element method for all data structures
16    public void addStudent(String name) {
17        studentList.add(name);
18    }
19    // ...
20    // remove-an-element method for all data structures
21    //...
22    // print-all-elements method for all data structures
23 }
```

In the **DataStructure** class, for **each** of the 6 data structures in the starter code

- write an add method to add an element to the data structure (see example in starter code)
- write a remove method to remove an element from the data structure
- write a print method that will print all of the elements in the data structure
- all data structures should be **private**; all methods should be **public**

In the **Main** class's main method

- create an instance of the DataStructure class
- use the instance of the class to
 - call the methods to add at least 3 items to all of the data structures
 - you do **not** need to get them from user input
 - call the print methods for all of the data structures
 - check that all 3 items are printed
 - call the methods to remove 1 item from each data structure
 - again call the print methods for all of the data structures
 - check that only 2 items are printed