

Lab – Java – Generics - Other Collections

Overview

Write an application that uses generic collections.

Create Console Application

Create a new Java console application.

Create a Normal Queue Instance in Main

Create an instance of a generic Queue interface of String in main that operates like a normal queue.

- Populate the queue with data from a file.
- You must create the file with the sample queue data at the end of this document. For NetBeans, make sure to put the file in the root directory of the project (right-click the project node when creating the file).

Print All Items – Queue

Write a method that takes a generic Queue interface of String as a parameter. Print all items using an Iterator interface reference. Make sure to call the method from main.

Create a Priority Queue Instance in Main

Create an instance of a generic Queue interface of String in main that operates like a priority queue. Populate it with data from the queue input file.

Print and Remove All Items – Priority Queue

Write a method that takes a generic Queue interface of String as a parameter. It should remove and print all items in the priority queue. Make sure to call the method from main.

Create a Map Instance in Main

Create an instance of a generic Map interface that associates numbers to regions. Your map should use the class that provides the faster lookup time. Populate it with data given at the end of the document.

Search Map

Write a method that will ask the user to enter a region number and then display the region associated with that number. If the user enters an invalid key, you should display a message specifically saying that the key was not valid. The program should not crash.

Create a Set Instance in Main

Create an instance of a generic Set interface that stores strings. Populate it with data given at the end of the document.

Print All Items – Set

Write a method that takes a generic Set interface of String as a parameter. Print all items using an Iterator interface reference. Make sure to call the method from main.

Sample Data (Queue)

Mateo
Kenji
Rose
Gwen
Emmanuel
Asad
Seiko
Keisha
Lucia
Mikhail
Oksana
Gabriela

Sample Data (Map)

3
East
1
North
2
South
4
West

Sample Data (Set)

Mateo
Kenji
Rose
Mateo
Kenji
Rose