Designing Interactive Systems II - Assignment 02

Group 12

- Vinoth Pandian Sermuga Pandian - 373445
- Arijit Gupta - 373982
- Vincentius Renaldi - 374050

2. Testing Your Understanding

1. We used a data structure to keep track of SimpleWindows. We have used LinkedList of “type” SimpleWindows to store the SimpleWindows objects.

2. The justifications are described below:

- adding/removing windows: LinkedList has a complexity of O(1) for insertion and deletion of elements using iterators. We used LinkedList since insertion, deletion is very fast compared to other similar data structures, e.g. ArrayList, and we expect a lot of insertions, deletions of SimpleWindows objects inside a Window system.

- drawing windows in front-to-back order: If we use for example Collection.sort() to sort the elements, then both ArrayList and LinkedList shows similar performance. Although for accessing an element in the list, LinkedList allows only sequential access, which takes time proportional to the size of the list.

- finding a specific window given an arbitrary (x, y) (desktop) coordinate: LinkedList lookups are O(n) when the list is not sorted.

- overall code complexity: The overall code complexity is low when using LinkedList and should be maintainable when new features will be added as part of upcoming assignments.

Code Decisions:

We created a Line object to maintain and draw the line instances. This helps to create and draw more than one line, to create polygons.