**Lab 5 : Week beginning 7/Oct/2019**

**Profiling in IntelliJ**

IntelliJ 2019.2.3 is the latest version. This has a built-in profiler.

See <https://www.jetbrains.com/help/idea/cpu-profiler.html>

### Use the **Java Flight Recorder –** See Load the custom configuration to the IDE. Then Start Profiling

To test the profiling software, use Lab5.java (in same folder as this document). This code is like code you created for Lab 1 – looking at efficiency of ArrayList and LinkedList.

In IntelliJ, create a new project and add Lab5.java. Also add the words\_alpha.txt

Run the program in the usual way and check that it works. It should output the time for multiple “gets” for ArrayList and LinkedList. This may be **slow** to run. The time for ArrayList may be very small if you run it for less iterations.

Run the program also using Java Flight Recorder. From the main menu, select **Run** or click Profiler on the toolbar.

In Call Tree tab, you will see

* The method name
* Percentage of total sample time (can be toggled to the parent call view)

Now add code to compare set, insert and remove.

Fill in the following table: (ArrayList and LinkedList are the same size)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | get | | | | set | | | | insert | | | | | remove | | | | |
|  | Big Oh value | Time as in Lab 1 | | Time from profiler | Big Oh value | Time as in Lab 1 | Time from profiler | | Big Oh value | Time as in Lab 1 | | Time from profiler | | Big Oh value | Time as in Lab 1 | | Time from profiler | |
| ArrayList  Size = |  |  | |  |  |  | |  |  | |  | |  |  | |  | |  |
| LinkedList |  | |  |  |  |  | |  |  | |  | |  |  | |  | |  |

Are the timings consistent with the Big Oh values? \_\_\_\_\_\_\_\_\_\_\_\_\_

Comment on results \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_