

ECE 462 C++ and Java

Lab Exercise 05 Performance of Vector and List

Yung-Hsiang Lu
yunglu@purdue.edu

Purpose

Understand the performance differences between

- different container classes: vector and list
- different operations: front and back
- implemented in different libraries: C++, Java, and Qt

Procedure

- Download the programs (zip).
- Uncompress it (unzip).
- Execute the programs.
- Draw a figure to compare the performance.

Vector Front

size	C++	Qt	Java
10	2.00E-06	3.00E-06	0.00E+00
100	1.00E-05	1.60E-05	0.00E+00
1000	3.21E-04	3.83E-04	1.00E-03
10000	2.91E-02	2.86E-02	3.60E-02
100000	3.34E+00	3.36E+00	3.40E+00
1000000	3.61E+02	3.61E+02	3.65E+02

Vector Back

size	C++	Qt	Java
10	1.00E-06	1.00E-06	0.00E+00
100	3.00E-06	4.00E-06	0.00E+00
1000	9.00E-06	2.30E-05	1.00E-03
10000	4.30E-05	2.00E-04	2.00E-03
100000	8.10E-04	2.19E-03	1.30E-02
1000000	9.28E-03	2.13E-02	1.26E-01

List Front

size	C++	Qt	Java
10	1.00E-06	2.00E-06	0.00E+00
100	5.00E-06	8.00E-06	0.00E+00
1000	5.00E-05	6.50E-05	0.00E+00
10000	4.98E-04	6.44E-04	9.00E-03
100000	5.42E-03	7.72E-03	2.10E-02
1000000	5.69E-02	6.54E-02	5.74E-01

List Back

size	C++	Qt	Java
10	0.00E+00	1.00E-06	0.00E+00
100	4.00E-06	6.00E-06	0.00E+00
1000	3.30E-05	3.90E-05	2.00E-03
10000	3.21E-04	3.51E-04	3.00E-03
100000	3.40E-03	3.65E-03	4.60E-02
1000000	3.20E-02	3.73E-02	2.54E-01

**Submission: A figure (PDF)
showing the performance.**

Use log-log scale for the figure.