

ECE Lab 6 Performance Results

# of concatenation operations	Approach 1 (String)	Approach 2 (StringBuilder)
10	0	0
100	0	0
1000	1	0
10000	59	0
100000	1889	2

Table 1. Performance measurements (in milliseconds) for each of the number of concatenation operations and each approach (“+” operation and StringBuilder).

The following answer refers to Table 1:

2b) Starting from 1000 concatenation operations we can begin to see that Approach 2 (StringBuilder) is better than Approach 1 (“+” operation).

# of strings	A1 (ops: 0)	A2 (ops: 0)	A1 (ops: 1)	A2 (ops: 1)	A1 (ops: 2)	A2 (ops: 2)	A1 (ops: 3)	A2 (ops: 3)	A1 (ops: 4)	A2 (ops: 4)
1000	0	0	1	0	1	0	1	0	0	1
10000	0	0	1	1	1	1	1	1	2	0
100000	0	2	7	1	4	1	7	1	8	2
1000000	1	8	12	6	22	6	49	7	49	14
10000000	7	44	122	52	223	62	329	69	442	95
100000000	63	385	998	442	2125	554	3267	691	4401	961

Table 2. Performance measurements (in milliseconds) for each of the number of concatenation operations, number of strings, and each approach (“+” operation and StringBuilder). A1 = Approach 1 (String), A2 = Approach 2 (StringBuilder), ops = # of concatenation operations.

The following answers refer to Table 2:

3b) The “+” operator is best when you have to perform no concatenation operations at all on the strings. At 100,000 strings the difference between the approaches really starts to show.

3c) It takes just one concatenation operation per string to make approach 2 (StringBuilder) the better one. We can see the stark difference begin at 100,000 strings, as approach 1 takes 7 milliseconds versus 1 millisecond for approach 2.