

### OFFLINE-1

Fixed: Range of the elements 1~100

Variable: Array Length

<i>Array Length</i>	Time			Swap			Comparisons		
1,000	0.003000	0.001000	0.001000	242484	243483	978	499500	242484	500499
5,000	0.072000	0.025000	0.047000	6217767	6222766	4934	12497500	6217767	12502499
10,000	0.327000	0.105000	0.183000	24574577	24584576	9875	49995000	24574577	50004999
50,000	7.804000	1.956000	3.665000	620223084	620273083	49521	1249975000	620223084	1250024999
1,00,000	31.734000	7.814000	14.567000	2484027978	2484127977	98993	4999950000	2484027978	5000049999
5,00,000									
	Bubble	Insertion	Selection	Bubble	Insertion	Selection	Bubble	Insertion	Selection

### OFFLINE-2

Fixed: Length of the Array 1000

Variable: Array Element Density

<i>Element Range</i>	Time			Swap			Comparisons		
1~100	0.018450	0.008310	0.010425	252544	253543	989	499500	252544	500499
1~500	0.023104	0.010157	0.013039	255997	256996	989	499500	255997	500499
1~1,000	0.038333	0.010504	0.013002	254810	255809	997	499500	254810	500499
1~5,000	0.025286	0.008687	0.013160	250373	251372	995	499500	250373	500499
1~10,000	0.017857	0.008344	0.010591	250322	251321	990	499500	250322	500499
1~50,000									
	Bubble	Insertion	Selection	Bubble	Insertion	Selection	Bubble	Insertion	Selection