r^0	Size(n)	r^2	Bubble sort Time(s)	Selection sort Time(s)	f(n) BigO(n^2) cb2	cs2	fit f(n) bubble	selection	+Delta Above bubble	selection
1	2500	6250000	0	0	0.0125	0.0063	0.1209	0.3802	-0.1084	-0.3739
1	5000	25000000	0	0	0.0500	0.0250	0.1334	0.2989	-0.0834	-0.2739
1	7500	56250000	0	0	0.1125	0.0563	0.1709	0.2302	-0.0584	-0.1739
1	10000	100000000	0	0	0.2000	0.1000	0.2334	0.1739	-0.0334	-0.0739
1	12500	156250000	0	0	0.3125	0.1563	0.3209	0.1302	-0.0084	0.0261
1	15000	225000000	1	0	0.4500	0.2250	0.4334	0.0989	0.0166	0.1261
1	17500	306250000	0	0	0.6125	0.3063	0.5709	0.0801	0.0416	0.2261
1	20000	400000000	1	0	0.8000	0.4000	0.7334	0.0739	0.0666	0.3261
1	22500	506250000	1	1	1.0125	0.5063	0.9209	0.0801	0.0916	0.4261
1	25000	625000000	1	0	1.2500	0.6250	1.1334	0.0989	0.1166	0.5261
1	27500	756250000	1	0	1.5125	0.7563	1.3709	0.1302	0.1416	0.6261
1	30000	900000000	1	1	1.8000	0.9000	1.6334	0.1739	0.1666	0.7261
1	32500	1056250000	2	0	2.1125	1.0563	1.9209	0.2302	0.1916	0.8261
1	35000	1225000000	2	1	2.4500	1.2250	2.2334	0.2989	0.2166	0.9261
1	37500	1406250000	2	0	2.8125	1.4063	2.5709	0.3802	0.2416	1.0261
1	40000	1600000000	3	1	3.2000	1.6000	2.9334	0.4739	0.2666	1.1261
1	42500	1806250000	2	1	3.6125	1.8063	3.3209	0.5802	0.2916	1.2261
1	45000	2025000000	4	1	4.0500	2.0250	3.7334	0.6989	0.3166	1.3261
1	47500	2256250000	3	1	4.5125	2.2563	4.1709	0.8302	0.3416	1.4261
1	50000	2500000000	4	1	5.0000	2.5000	4.6334	0.9739	0.3666	1.5261
1	52500	2756250000	5	1	5.5125	2.7563	5.1209	1.1302	0.3916	1.6261
1	55000	3025000000	4	2	6.0500	3.0250	5.6334	1.2989	0.4166	1.7261
1	57500	3306250000	6	1	6.6125	3.3063	6.1709	1.4802	0.4416	1.8261
1	60000	3600000000	5	2	7.2000	3.6000	6.7334	1.6739	0.4666	1.9261
1	62500	3906250000	6	2	7.8125	3.9063	7.3209	1.8802	0.4916	2.0261
1	65000	4225000000	7	2	8.4500	4.2250	7.9334	2.0989	0.5166	2.1261
1	67500	4556250000	7	2	9.1125	4.5563	8.5709	2.3302	0.5416	2.2261
1	70000	4900000000	8	2	9.8000	4.9000	9.2334	2.5739	0.5666	2.3261
1	72500	5256250000	8	2	10.5125	5.2563	9.9209	2.8302	0.5916	2.4261
1	75000	5625000000	9	3	11.2500	5.6250	10.6334	3.0989	0.6166	2.5261
1	77500	6006250000	10	3	12.0125	6.0063	11.3709	3.3802	0.6416	2.6261
1	80000	6400000000	10	3	12.8000	6.4000	12.1334	3.6739	0.6666	2.7261
1	82500	6806250000	11	3	13.6125	6.8063	12.9209	3.9802	0.6916	2.8261
1	85000	7225000000	11	3	14.4500	7.2250	13.7334	4.2989	0.7166	2.9261
1	87500	7656250000	14	4	15.3125	7.6563	14.5709	4.6302	0.7416	3.0261
1	90000	8100000000	14	5	16.2000	8.1000	15.4334	4.9739	0.7666	3.1261
1	92500	8556250000	14	6	17.1125	8.5563	16.3209	5.3302	0.7916	3.2261
1	95000	9025000000	15	6	18.0500	9.0250	17.2334	5.6989	0.8166	3.3261
1	97500	9506250000	16	7	19.0125	9.5063	18.1709	6.0802	0.8416	3.4261
1	100000	10000000000	16	7	20.0000	10.0000	19.1334	6.4739	0.8666	3.5261

bubble sort vs selection sort timing analysis

● fit f(n) bubble   ● fit f(n) selection
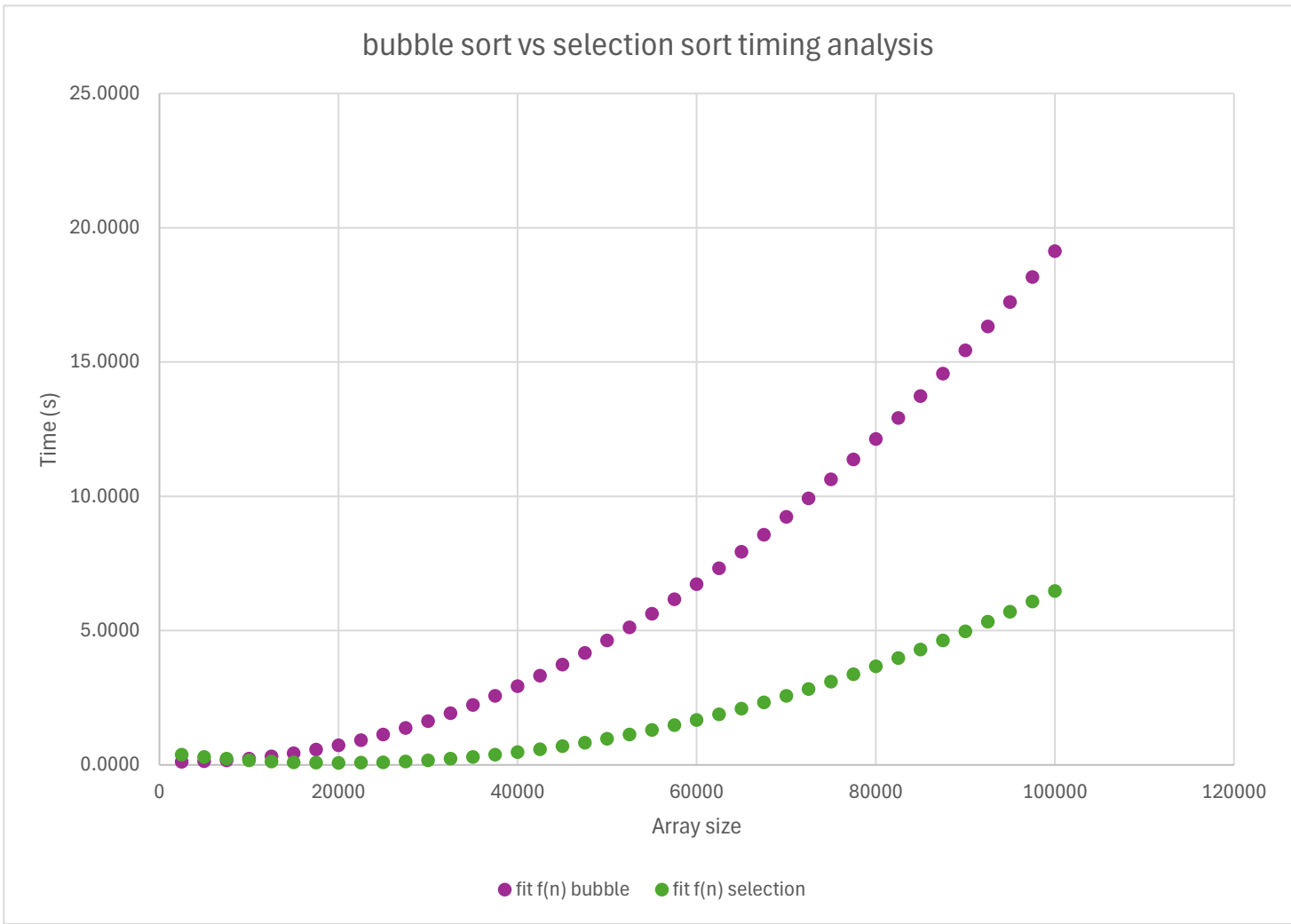
Cb0 =	0.1334		Cs0 =	0.4739
cb1 =	-1.00E-05		Cs1 =	-4.00E-05
Cb2 =	2.00E-09		Cs2 =	1.00E-09

$$f(n) = c_0 \cdot x^0 + c_1 \cdot x^1 + c_2 \cdot x^2$$

			Bubble sort	Selection sort	fit f(n)	
r^0	Size(n)	r^2	Time(s)	Time(s)	bubble	selection
1	2500	6250000	0	0	0.1209	0.3802
1	50000	2.5E+09	4	1	4.6334	0.9739
1	75000	5.63E+09	9	3	10.6334	3.0989
1	100000	1E+10	16	7	19.1334	6.4739

The leading terms in both equations are proportional to x^2, indicating a quadratic growth rate.
Therefore, both algorithms show a time complexity of: $O(n^2)$ by timing analysis.
The high R^2 values confirm the accuracy of the quadratic model
Although both are $O(n^2)$, bubble sort has a larger coefficient (2E-09), meaning it grows faster and takes more time as n ncreases.