

Table 1 the generation time of sub-covering arrays for *Flex*

Round	Bottom-up					Top-down				
	2-wise	3-wise	4-wise	5-wise	6-wise	2-wise	3-wise	4-wise	5-wise	6-wise
round-1	41	27	30	39	51	1	5	20	56	90
round-2	28	27	30	37	48	1	5	19	55	72
round-3	29	27	29	41	48	1	5	20	53	74

Table 2 the generation time of sub-covering arrays for *Grep(SIR)*

Round	Bottom-up					Top-down				
	2-wise	3-wise	4-wise	5-wise	6-wise	2-wise	3-wise	4-wise	5-wise	6-wise
round-1	4027	3115	3455	4394	2971	3	18	40	66	3208
round-2	3196	3102	3260	3343	3643	3	21	41	67	4469
round-3	2040	3114	3155	3355	3661	2	18	39	66	4374

Table 3 the generation time of sub-covering arrays for *Gzip*

Round	Bottom-up					Top-down				
	2-wise	3-wise	4-wise	5-wise	6-wise	2-wise	3-wise	4-wise	5-wise	6-wise
round-1	104820	110562	120288	106156	110664	3	26	155	413	108450
round-2	110334	108128	110686	111474	113024	4	28	158	415	106975
round-3	113617	106653	111039	108750	109052	2	27	159	423	109031

Table 4 the generation time of sub-covering arrays for *Make*

Round	Bottom-up					Top-down				
	2-wise	3-wise	4-wise	5-wise	6-wise	2-wise	3-wise	4-wise	5-wise	6-wise
round-1	35	25	27	30	43	1	2	11	46	76
round-2	28	26	26	32	44	0	2	11	53	61
round-3	28	25	28	33	45	0	3	15	52	61

Table 5 the generation time of sub-covering arrays for *Sed*

Round	Bottom-up					Top-down				
	2-wise	3-wise	4-wise	5-wise	6-wise	2-wise	3-wise	4-wise	5-wise	6-wise
round-1	4361	6480	4356	4534	4627	6	54	151	233	7834
round-2	4324	2703	3935	4549	4631	7	57	145	226	8377
round-3	4303	21352	3882	4510	4619	8	59	172	292	8211

Table 6 the generation time of sub-covering arrays for *NanoXML*

Round	Bottom-up					Top-down				
	2-wise	3-wise	4-wise	5-wise	6-wise	2-wise	3-wise	4-wise	5-wise	6-wise
round-1	41	26	27	28	28	1	2	3	6	42
round-2	28	25	27	29	26	0	1	3	5	33
round-3	28	25	28	26	27	1	2	4	5	34

Table 7 the generation time of sub-covering arrays for *Siena*

Round	Bottom-up					Top-down				
	2-wise	3-wise	4-wise	5-wise	6-wise	2-wise	3-wise	4-wise	5-wise	6-wise
round-1	34	32	52	129	251	1	8	54	84	562
round-2	36	34	54	121	255	2	10	46	95	467
round-3	32	34	52	124	259	1	11	44	95	463

Table 8 the generation time of sub-covering arrays for *Findutils*

Round	Bottom-up					Top-down				
	2-wise	3-wise	4-wise	5-wise	6-wise	2-wise	3-wise	4-wise	5-wise	6-wise
round-1	45	36	151	1348	9098	3	37	302	1851	15121
round-2	43	37	151	1329	8793	2	38	331	1961	14093
round-3	43	37	152	1337	8766	2	36	304	1884	13954

Table 9 the generation time of sub-covering arrays for *Grep(CoRE)*

Round	Bottom-up					Top-down				
	2-wise	3-wise	4-wise	5-wise	6-wise	2-wise	3-wise	4-wise	5-wise	6-wise
round-1	28	30	71	462	2967	1	18	179	1372	4993
round-2	29	31	69	453	2947	1	19	177	1357	4964
round-3	30	30	70	453	2941	2	18	179	1440	4990