

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

Round	Bottom-up				Top-down			
	2-wise	3-wise	4-wise	5-wise	2-wise	3-wise	4-wise	5-wise
round-1	30	29	32	39	1	9	49	49
round-2	35	28	31	38	1	6	52	52
round-3	32	31	37	189	1	6	51	49

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	2-wise	3-wise	4-wise	5-wise
round-1	2828	4293	4433	5062	6	26	77	3461
round-2	2091	3124	3471	3343	4	17	70	3477
round-3	2037	3153	3882	2442	4	16	71	3425

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

Round	Bottom-up				Top-down			
	2-wise	3-wise	4-wise	5-wise	2-wise	3-wise	4-wise	5-wise
round-1	108531	109141	107177	110020	3	33	242	108047
round-2	108668	109196	109808	111857	2	36	243	107225
round-3	110345	110470	109805	107492	2	35	246	106233

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

Round	Bottom-up				Top-down			
	2-wise	3-wise	4-wise	5-wise	2-wise	3-wise	4-wise	5-wise
round-1	40	25	28	32	1	3	24	58
round-2	27	26	28	33	1	3	23	40
round-3	28	24	26	31	0	3	25	41

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

Round	Bottom-up				Top-down			
	2-wise	3-wise	4-wise	5-wise	2-wise	3-wise	4-wise	5-wise
round-1	4339	4294	4761	4051	9	72	196	4587
round-2	4347	4323	3849	4024	9	98	209	5967
round-3	4377	4268	4355	4037	10	101	217	4864

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

Round	Bottom-up				Top-down			
	2-wise	3-wise	4-wise	5-wise	2-wise	3-wise	4-wise	5-wise
round-1	42	46	26	31	1	2	6	50
round-2	31	28	28	28	0	2	6	30
round-3	31	27	38	29	0	2	6	32

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

Round	Bottom-up				Top-down			
	2-wise	3-wise	4-wise	5-wise	2-wise	3-wise	4-wise	5-wise
round-1	33	35	51	139	2	14	99	181
round-2	36	34	55	135	1	9	72	179
round-3	35	35	52	127	1	7	81	182

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

Round	Bottom-up				Top-down			
	2-wise	3-wise	4-wise	5-wise	2-wise	3-wise	4-wise	5-wise
round-1	43	35	152	1350	3	36	523	2175
round-2	30	38	158	1370	3	69	512	1952
round-3	31	37	152	1424	2	36	520	1931

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	2-wise	3-wise	4-wise	5-wise
round-1	33	35	116	663	1	24	313	675
round-2	37	40	100	704	1	28	312	681
round-3	38	41	106	666	1	24	316	672