

Bag and Size Constraints Results

Benchmarks	Method	Omega	Isabelle		
		Shape + Size	Shape + Size	Shape + Bag	Shape + Bag + Size
list_set.ss	append	0.05 [sec]	1.2 [sec]	1.11 [sec]	1.48 [sec]
list_set.ss	comm	0.02 [sec]	0.28 [sec]	0.23 [sec]	0.47 [sec]
list_set.ss	tail	0.02 [sec]	0.48 [sec]	0.27 [sec]	0.41 [sec]
list_set.ss	head	0.03 [sec]	0.92 [sec]	0.3 [sec]	0.39 [sec]
list_set.ss	insert	0.02 [sec]	0.36 [sec]	0.21 [sec]	0.24 [sec]
list_set.ss	length	0.07 [sec]	2.94 [sec]	2.2 [sec]	3.44 [sec]
list_set.ss	fold	0.04 [sec]	0.41 [sec]	0.38 [sec]	0.41 [sec]
list_set.ss	exist	0.12 [sec]	5.17 [sec]	4.41 [sec]	6.18 [sec]
list_set.ss	part	0.2 [sec]	11.54 [sec]	15.44 [sec]	24.15 [sec]
check_ref.ss	test	0.05 [sec]	1.25 [sec]	1.06 [sec]	1.38 [sec]
check_view.ss		0.16 [sec]	3.04 [sec]	3.09 [sec]	3.72 [sec]
test4.ss		0.04 [sec]	1.24 [sec]	no view	no view
test5.ss		0.02 [sec]	0.02 [sec]	no view	no view
test_op.ss		0.47 [sec]	2.89 [sec]	no view	no view
test_while.ss		0.04 [sec]	0.85 [sec]	no view	no view
avl_orig.ss	rotate_left_child	0.5 [sec]	388.36 [sec]	no bag spec.	no bag spec.
selection.ss	find_min	0.29 [sec]	60.07 (7.91) [sec]	7.79 [sec]	12.25 [sec]
selection.ss	delete_min	0.28 [sec]	fails (9.46)	7.94 [sec]	16.81 [sec]
selection.ss	selection_sort	0.24 [sec]	80.34 [sec]	3.58 [sec]	8.87 [sec]
qsort.ss	partition	0.24 [sec]	7.65 [sec]	15.32 [sec]	24.7 [sec]
qsort.ss	append_ll	0.22 [sec]	24.81 [sec]	7.79 [sec]	12.25 [sec]
qsort.ss	qsort	(0.21) [sec]	20.11 [sec]	26.42 [sec]	57.11 [sec]
bubble.ss	bubble	1.29 [sec]	297.81 (49.69) [sec]	47.61 [sec]	77.56 [sec]
bubble.ss	bsort	0.09 [sec]	24.81 [sec]	1.05 [sec]	1.27 [sec]
insertion.ss	insert	0.21 [sec]	41.51 [sec]	7.32 [sec]	10.49 [sec]
insertion.ss	insertion_sort	0.26 [sec]	73.29 [sec]	4.35 [sec]	9.18 [sec]
merge.ss	count	0.19 [sec]	16.78 [sec]	2.85 [sec]	5.41 [sec]
merge.ss	split	0.26 [sec]	51.38 [sec]	13.84 [sec]	24.19 [sec]
merge.ss	insert	0.34 [sec]	41.71 [sec]	10.28 [sec]	20.39 [sec]

Benchmarks	Method	Mona		
		Shape + Set	Shape + Set + Size	(Shape + Size)
list_set.ss	append	1.86 [sec]	fails (addition of two var)	0.09 [sec]
list_set.ss	comm	0.28 [sec]	fails (addition of two var)	0.05 [sec]
list_set.ss	tail	2.17 [sec]	9.13 [sec]	0.04 [sec]
list_set.ss	head	5.95 [sec]	24.95 [sec]	0.06 [sec]
list_set.ss	insert	0.8 [sec]	1.74 [sec]	0.06 [sec]
list_set.ss	length	105.78 [sec]	808.88 [sec]	0.16 [sec]
list_set.ss	fold	1.38 [sec]	1.28 [sec]	0.05 [sec]
list_set.ss	exist	301.25 [sec]	955.89 [sec]	0.28 [sec]
list_set.ss	part	fails (out of memory)	fails (addition of two var)	0.55 [sec]
check_ref.ss	test	0.56 [sec]	3.44 [sec]	0.09 [sec]
check_view.ss		13.29 [sec]	38.85 [sec]	0.3 [sec]
test4.ss		(22.09 [sec])no view	no view	0.06 [sec]
test5.ss		(0.02 [sec])no view	no view	0.02 [sec]
test_op.ss		(0.49 [sec])no view	no view	0.19 [sec]
test_while.ss		(0.07 [sec])no view	ne view	0.07 [sec]
avl_orig.ss	rotate_left_child	no bag spec.	no bag spec.	fails
selection.ss	find_min	519.53 [sec]	5887.7 [sec]	4.92 [sec]
selection.ss	delete_min	614.65 [sec]	fails (out of memory)	8.21 [sec]
selection.ss	selection_sort	73.11 [sec]	fails (out of memory)	5.74 [sec]
qsort.ss	partition	fails (out of memory)	fails (addition of two var)	11.1 [sec]
qsort.ss	append_ll	256.53 [sec]	fails (addition of two var)	34.18 [sec]
qsort.ss	qsort	fails (out of memory)	fails (addition of two var)	(0.77) [sec]
bubble.ss	bubble	fails (out of memory)	fails (out of memory)	8.85 [sec]
bubble.ss	bsort	1.13 [sec]	2.58 [sec]	0.18 [sec]
insertion.ss	insert	fails (out of memory)	fails (out of memory)	16.17 [sec]
insertion.ss	insertion_sort	291.18 [sec]	fails (out of memory)	fails (out of memory)
merge.ss	count	230.41 [sec]	626.74 [sec]	0.84 [sec]
merge.ss	split	fails (out of memory)	fails (out of memory)	9.5 [sec]
merge.ss	insert	4460.9 [sec]	fails (out of memory)	16.8 [sec]

Remark: The last coloumn for Mona (Shape + Size) was obtained by representing integers as sets.