

# Results from the Compiler Construction Competition

IMADA

May, 2010

## Public Programs

Program	Group							
	1	2	3	4	5	6	8	
AbsTest						$R_O$		
ArrayIndex								
Assoc								
ErrOutOfBounds1	$R_O$		$R_E$					
ErrOutOfBounds2	$R_O$							
Factorial								
Function								
IfThen								
KnapsackNoComments								
Knapsack								
SimpleRecord								
StaticLink								
WhileDo								

## Other Programs

Program	Group						
	1	2	3	4	5	6	8
AbsoluteValueTest	$C_E$	$C_E$		$C_E$	$C_E$	$C_E$	$C_O/C_E$
ArrayComparisonsA			$C_E$		$C_E$		
ArrayComparisonsB			$C_S$		$C_S$		$C_E$
ArrayLength			$R_O$				
ArrayOfOwnType			$R_O$		$C_E$		
ArrayOfRecords			$C_S$		$C_S$		$C_S$
BinarySearchTree			$C_S$		$C_E$		$C_E$
Comments							
ErrAssignToType			$C_E$				
ErrFuncParamsInvalidType		$C_E$					
ErrFuncParamsTooFew							
ErrFuncParamsTooMany							
ErrInvalidToken	$C_E/C_O$				$C_E/C_O$		$C_E$
ErrRuntimeDiv0	$R_O$						$R_O$
ErrRuntimeNegArraySize	$R_O$		$R_E$				$R_O$
ErrRuntimeNullPointer	$R_O$	$R_S$	$C_E$		$R_E(2)$		$R_E(101)/R_O$
ErrRuntimeOutOfMem	$R_O$		$R_E$				$R_S/R_O/R_T$
ErrTypeLoop			$C_T$	$C_E$			
ErrUnmatchedBeginComment	$C_E$	$C_E$	$C_E$		$C_E$		$C_E$
FuncCallAsParamA							
FuncCallAsParamB							
FuncModifyingParams			$R_O$		$R_T$		
FuncParamsEvalOrder	$R_O$	$R_O$	$R_O$		$R_O$		$R_O$
FuncRedefinedInItself			$C_O$		$C_O$		
FuncRedefinedReturnType					$C_E$		$C_E$
FuncRedefinedType	$C_E$						
FuncReturnRecord			$R_O$		$C_E$		$C_S/C_T$
LargeExpTreeA			$C_O$				
LargeExpTreeB			$C_O$				
LargeExpTreeC			$C_O$				
MultiDimArray			$C_E$		$C_S$		$C_E$
MultipleTypecheckPassesA			$C_E$		$C_E$		$C_E$
MultipleTypecheckPassesB			$C_S$		$C_E$		$C_E$
MultipleTypecheckPassesC							
NullCorrect			$C_E$				
NullWrong					$C_E$		
RecordComparisonsA			$C_E$		$C_E$		
RecordComparisonsB			$C_S/C_T$		$C_E$		$C_E$
RecordsWithArray			$C_S$				
Recursion							
ReturnInMainScope	$C_E$		$C_E$				
ShortCircuitAND	$R_T$	$R_T$	$R_T$		$R_T$		
ShortCircuitOR	$R_T$	$R_T$	$R_T$		$R_T$		
StaticLinkA		2			$R_O$		$R_O$
StaticLinkB			$R_O$		$R_O$		$R_S$

**Total**

Problem Type	Group						
	1	2	3	4	5	6	8
Compile-time	5	3	20	2	17	1	12
Run-time	9	4	11	0	7	1	7
Total (of 45 tests)	14	7	31	2	24	2	19

# Legend

Compile-time problems:

$C_T$  : Compiler does not terminate.

$C_E$  : Compiler gives no or incorrect error when an error during compilation was expected, or compiler gives an error when no error during compilation was expected.

$C_S$  : Compiler gives Segmentation fault or Floating exception.

$C_O$  : The produced output cannot be assembled.

Run-time problems:

$R_T$  : The compiled program does not terminate.

$R_E$  : The compiled program gives no or incorrect runtime error when a runtime error was expected, or the compiled program gives a runtime error when no runtime error was expected.

$R_S$  : The compiled program gives Segmentation fault or Floating exception.

$R_O$  : The compiled program produces incorrect output.

$R_X$  : The compiled program behaves in an unexpected fashion.

## Time Trial on Knapsack

Compilation done using the -x switch. All tests performed on julia, each program run 3 times

Group	First	Second	Third	Average
1	<i>1m40s</i>	<i>1m40s</i>	<i>1m40s</i>	<i>1m40s</i>
2	<i>52s</i>	<i>52s</i>	<i>52s</i>	<i>52s</i>
3	<i>42s</i>	<i>42s</i>	<i>42s</i>	<i>42s</i>
4	<i>39s</i>	<i>39s</i>	<i>39s</i>	<i>39s</i>
5	<i>37s</i>	<i>37s</i>	<i>37s</i>	<i>37s</i>
6	<i>30s</i>	<i>30s</i>	<i>30s</i>	<i>30s</i>
8	<i>26s</i>	<i>26s</i>	<i>26s</i>	<i>26s</i>