

comp arch exercise 21 Jan 2020

I made an interpreter of a language, Som. The "virtual machine" is implemented. Your job is to calculate the speedup to compare between several virtual machines. Here is the link to the main story of Som development.

<https://www.cp.eng.chula.ac.th/~prabhas//project/som/birthday/birthday2008.htm>

Question

Compare the performance between v2, v3, v4 on run-time speedup.

The first measurement is the number of instruction executed. The second measurement is the actual "wall clock" time. Show the speedup of these two measurements of those three virtual machines.

Here is the benchmark programs

bubble sorts 20 items 20..1 to 1..20

matmul 8x8 using "mul" instruction

queen solves all soln of 8-queen (92)

queen2 use macro and to speed thing up

quick sorts 100 items 100..1 to 1..100

Here is the raw data.

Number of instruction

noi	v2	v3	v4
bubble	10072	6594	6172
matmul	16055	9345	10982
queen	618570	371190	418401
quick	44013	32167	26471

running time ms

	v2	v3	v4
bubble x1000	230	251	110
matmul x1000	370	358	221
queen x100	1712	861	871
quick x1000	821	763	411