**Command: time ./mipsim -s -d -f shang0.sim (-O0 shang)**

RF:

0

0

1

14

ffffa440

14

14

13

13

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

Total number of dynamic instructions: 1383597537

Branches:

Forward:

Taken: 11531213

Not taken: 3586553

Backward:

Taken: 43100062

Not taken: 1806470

Branch delay slot:

Useful instruction: 0

Not useful instruction: 60024298

Load Use Hazard:

Has load use hazard: 1793266

Has no load use hazard: 219946480

real 9m24.490s

user 7m3.587s

sys 0m0.973s

**Command: time ./mipsim -s -c256 -d -f shang0.sim (-O0 shang with 256 cache)**

RF:

0

0

1

14

ffffa440

14

14

13

13

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

Total number of dynamic instructions: 1383597537

Branches:

Forward:

Taken: 11531213

Not taken: 3586553

Backward:

Taken: 43100062

Not taken: 1806470

Branch delay slot:

Useful instruction: 0

Not useful instruction: 60024298

Load Use Hazard:

Has load use hazard: 1793266

Has no load use hazard: 219946480

256 byte cache (blocksize 4 bytes): 461916054 hits, 9103096 misses (hit rate: 98.0674%)

256 byte cache (blocksize 8 bytes): 463859280 hits, 7159870 misses (hit rate: 98.4799%)

256 byte cache (blocksize 16 bytes): 461750504 hits, 9268646 misses (hit rate: 98.0322%)

256 byte cache (blocksize 32 bytes): 445878974 hits, 25140176 misses (hit rate: 94.6626%)

256 byte cache (blocksize 64 bytes): 416049462 hits, 54969688 misses (hit rate: 88.3296%)

256 byte cache (blocksize 128 bytes): 378578871 hits, 92440279 misses (hit rate: 80.3744%)

256 byte cache (blocksize 256 bytes): 426342846 hits, 44676304 misses (hit rate: 90.515%)

real 21m11.399s

user 16m49.287s

sys 0m7.172s