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CS320 Project 1 report

Crafty_branch_trace	Galgel_branch_trace	Vpr_branch_trace
64	59	60
36	41	40
59 60 65 72 77 81 84	59 93 95 95 95 95 95	70 67 69 77 79 80 81
66 67 71 79 83 86 88	79 95 96 96 96 96 96	72 73 73 82 85 86 88
89 89 87 87 86 87 87 87 87	96 97 97 98 96 96 98 98 98	94 92 94 94 93 94 94 94 93
92	98	96

For the Always Taken and Always Non-Taken branch predictors, the output matches the correct output

provided. The Bimodal Predictor with a single bit and 2-bit history outputted the correct results. The

optimal table size for both predictors would be 4096 entries because all the addresses presented the

same numbers after the 12th bit. Before that, all bits were different. The averages on the Bimodal

Single Bit History Predictor are 71%, 90%, and 75%, respectively. The averages for the Bimodal 2-Bit

History Predictor are 77%, 93%, and 80% respectively. Gshare Predictors also outputted the correct

results for each the varying history length. The predictions started to become consistent when the

history length is at 8 bits. The tournament predictor for the crafty_branch_trace was off by a percent

while the others traces outputted the correct results.

The best performing predictor is the Tournament Predictor, because it uses both the bimodal and gshare

predictors and decided which predictor is best depending on the branch it is analyzing. The optimal

configuration for this predictor is to have a table size with 4096 entries. With 4096 entries, the bimodal

will perform at its optimal performance and therefore increase the performance of the Tournament

Predictor.