Explanation

The first behaviour I noticed in the statistics produced by running the MIPS statistics on my code for assignment 6 is that in the BHT prediction, the median percentage of correct predictions increased as the array size increased. I believe the reason for this is because as the number of branches increases, the number of unsuccessful predictions will increase at a slower pace than the successful predictions. Were the median percentage less than 50% (meaning there were more unsuccessful predictions than successful predictions), I believe the prediction percentage would have gotten worse, as the unsuccessful predictions will increase at a faster pace. The second thing that I noticed was that all the cache statistics became worse as the test size increased. The reason for this is because as the number of cache access attempts increases, the opportunity for more misses will also increase. The final thing I noticed was that as the array size increased the percentage of instructions that were branch and memory instructions increased, while the ALU and jump percentages decreased. I believe the reason for this is that while the difference between the number of instructions stays the similar, but as the numbers increase, the ratio will decrease as the difference stays similar.