CPE 315 lab 6 write up
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For ideal static branch prediction I would have the static branches that go forward default to not taken. This is due to the fact that most branches that go forward go forward under very specific conditions such as the end of a loop. On the other hand I would have the static branch condition for backward branches statically predict taken for a similar, but opposite reason as the above. Backwards branches tend to be the ends of loops and as such are taken much more often than they are not taken.

I would use a line size of 2, this would leave us with enough space for up to 64 indexes to places data in while also allowing us to use 2 spaces per index to store data effectively.

Though we did not complete enough of this lab to discern the differences between no optimization and -O3 compiler optimizations for this specific lab, we have learned much about this from previous labs and other sources throughout the course. From this acquired knowledge we know that the -O3 optimization is significantly faster than its unoptimized counterpart. What we also know that the assembly language code that is generated by the compiler is significantly more difficult to read and understand in the -O3 optimization. The -O3 optimization is also significantly shorter, with a smaller file size.