

Part1

Run the above program. The program's behavior should appear identical to the earlier program having just "B = A;"

Part2

Run the above program. Set the input switches to all 0s, and observe that the output is 32. Set the input switches to one hundred, or "01100100" in binary (A7 is 0, A6 is 1, A5 is 1, etc.), and observe that the output is 212. Try other inputs also and observe and verify the output.

Part3

Run the above program. Set the input switches to all 0s, and observe that the output is 32. Set the input switches to one hundred, or "01100100" in binary (A7 is 0, A6 is 1, A5 is 1, etc.), and observe that the output is 212. Try other inputs also and observe and verify the output.

Part4

Run the above program, change A0, A1, and A2, and observe B. Step through the program to observe the branches that are executed when A0 is 1, A1 is 0, and A2 is 1, noting that B becomes 2. Now modify the program by putting "else" before the latter two "if" statements, and step again to observe the undesired behavior wherein only the first branch's sub-statements are executed for those values of A0, A1, and A2.

Part5

Run the above program. Set A to 2 and note from the printed output that the inner while loop body executes twice, and the result is 4, which appears on B. Set A to 0 and note that the inner while loop body does not execute, and the result is 1. Set A to 15 and note that the result is 32768, though B does not show that value because B's 8 bits cannot represent numbers larger than 255.