|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cases | B | S1 | S0 | Y |
| A | 00000001010101001101000101010000 | 0 | 0 | 00000000000000000000000000000000 |
| B | 00000001010101001101000101010000 | 0 | 1 | 00000001010101001101000101010000 |
| C | 00000001010101001101000101010000 | 1 | 0 | 11111110101010110010111010101111 |
| D | 00000001010101001101000101010000 | 1 | 1 | 11111111111111111111111111111111 |

The 32-bit B logic applies the 1-bit B logic to 32-bit inputs, with S1 and S0 determining if it outputs all 0s, the input B, the 1’s complement of B or all 1’s, the input B in this case being the binary representation of my student number, 22335824.