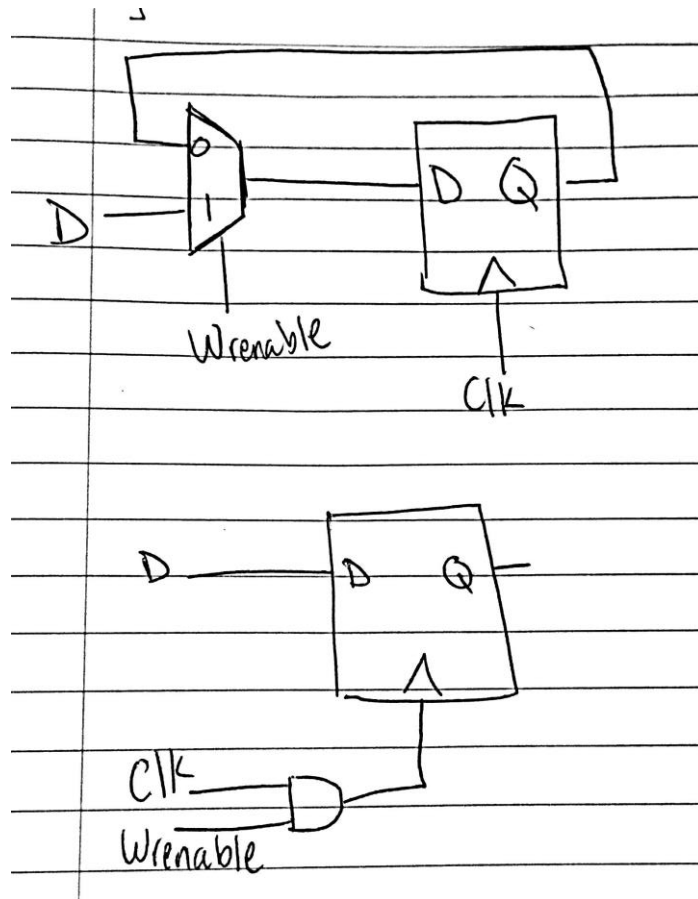


Deliverable 1:



Deliverable 6:

The purpose of a decoder is to set exactly one of the output bits high, and the rest to zero. Which bit is set high is determined by the address.

When enable is 0, the rest will be 32b'0: all outputs are low.

When enable is 1, the decoder will function. Sign-extended this is ---00001, with trailing zeros out front. If address=0, we bit shift enable 0 bits, so we return out=---0001. If address=3, we bit shift 3 bits. Now, out=---001000. By bit shifting the enable by the address, we return all bits to zero except the one referenced by the address.