AND as NAND?

$$A \quad B \quad \overline{A.B} \quad \overline{\overline{A.B}} = A.B$$
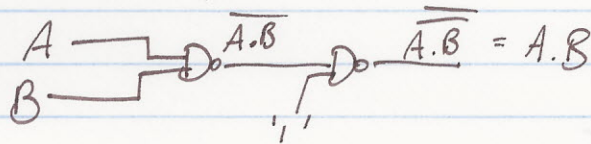
So we can write AND, OR, and NOT in terms of NAND.
You can also do the same with NOR, and the proof is very similar.

From here we will go on to circuits that can remember values.