Project Strawberry
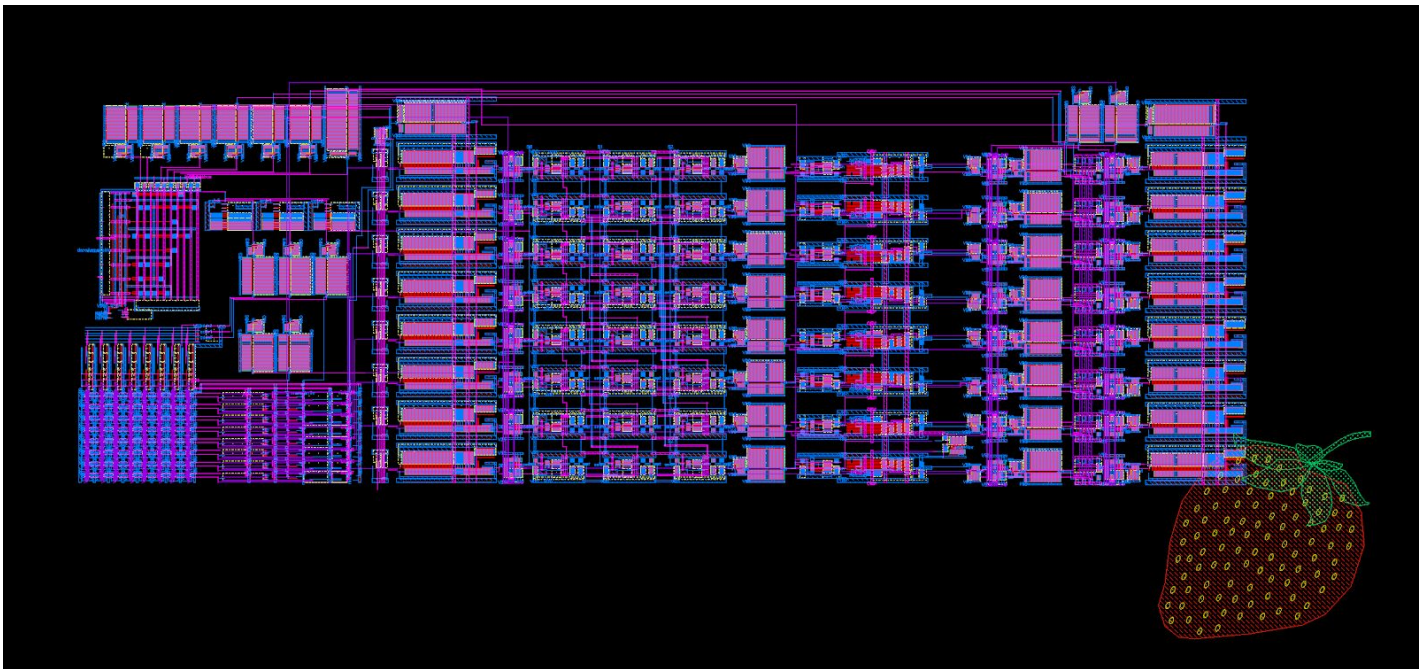
Digital VLSI 2019
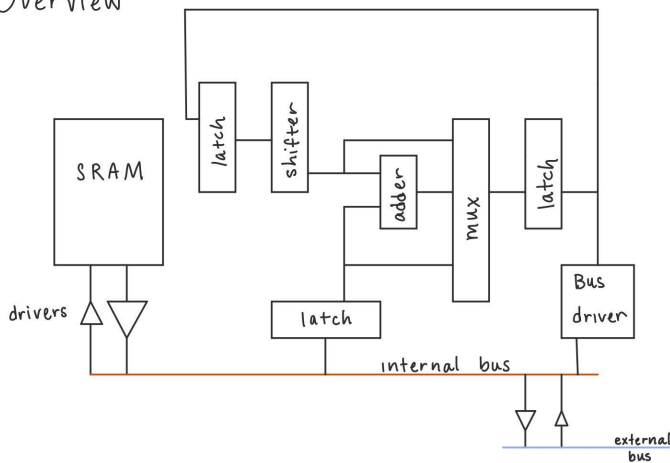partner: William Meng

A custom 8-bit microcontroller, designed and layed out in Cadence Virtuoso using 90nm CMOS.

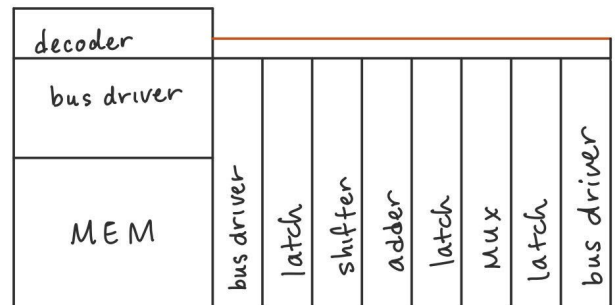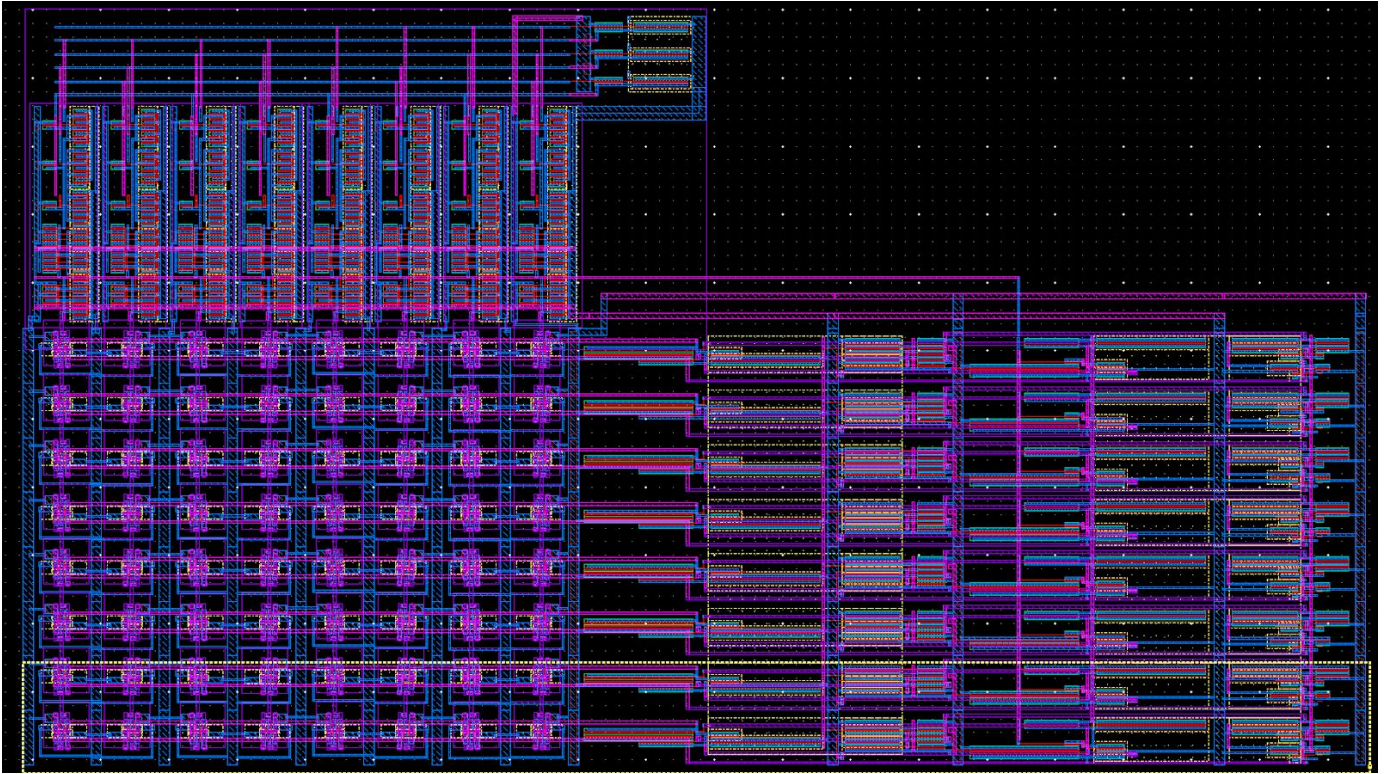The final product is shown above.

Below are closeups of the components in the 8-bit microcontroller.

8-bit 2's Complement Ripple Carry Adder:
-   8 one-bit 2's complement adders and an XOR gate for overflow detection

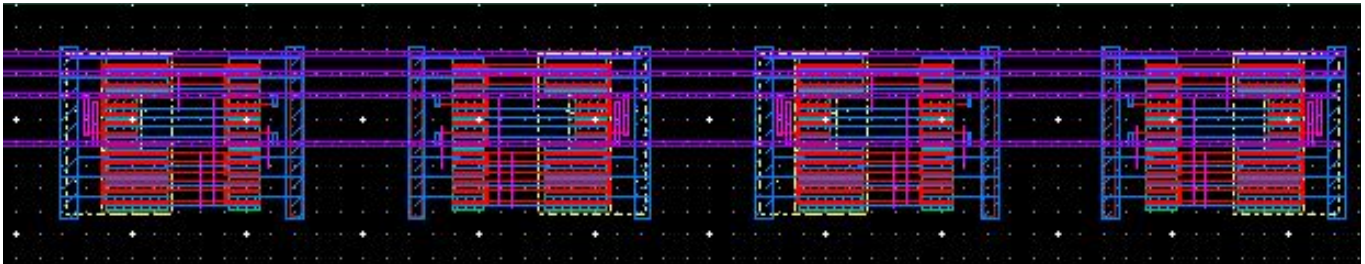## 8 bit shifter created from muxes:

SRAM with single-ended read:
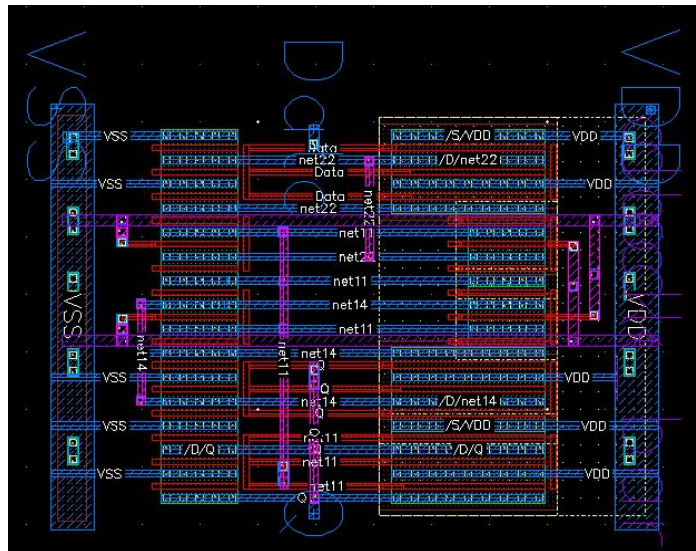- 8 Wordlines
- decoder

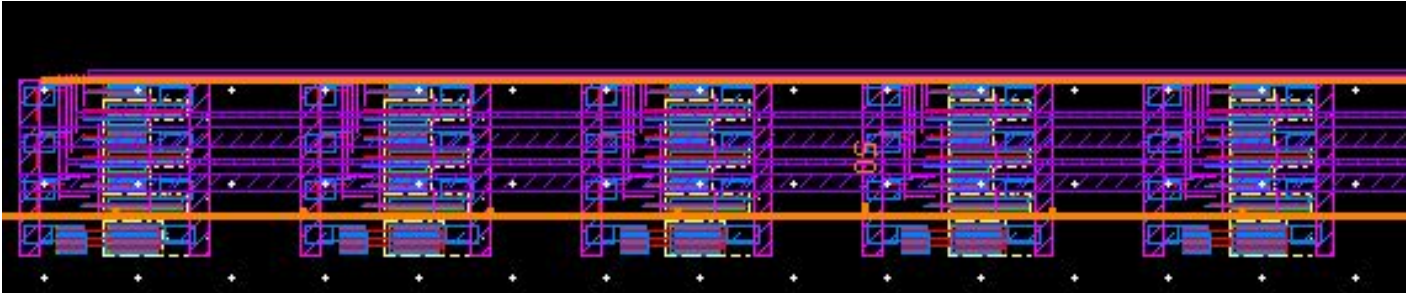

8-bit latch:
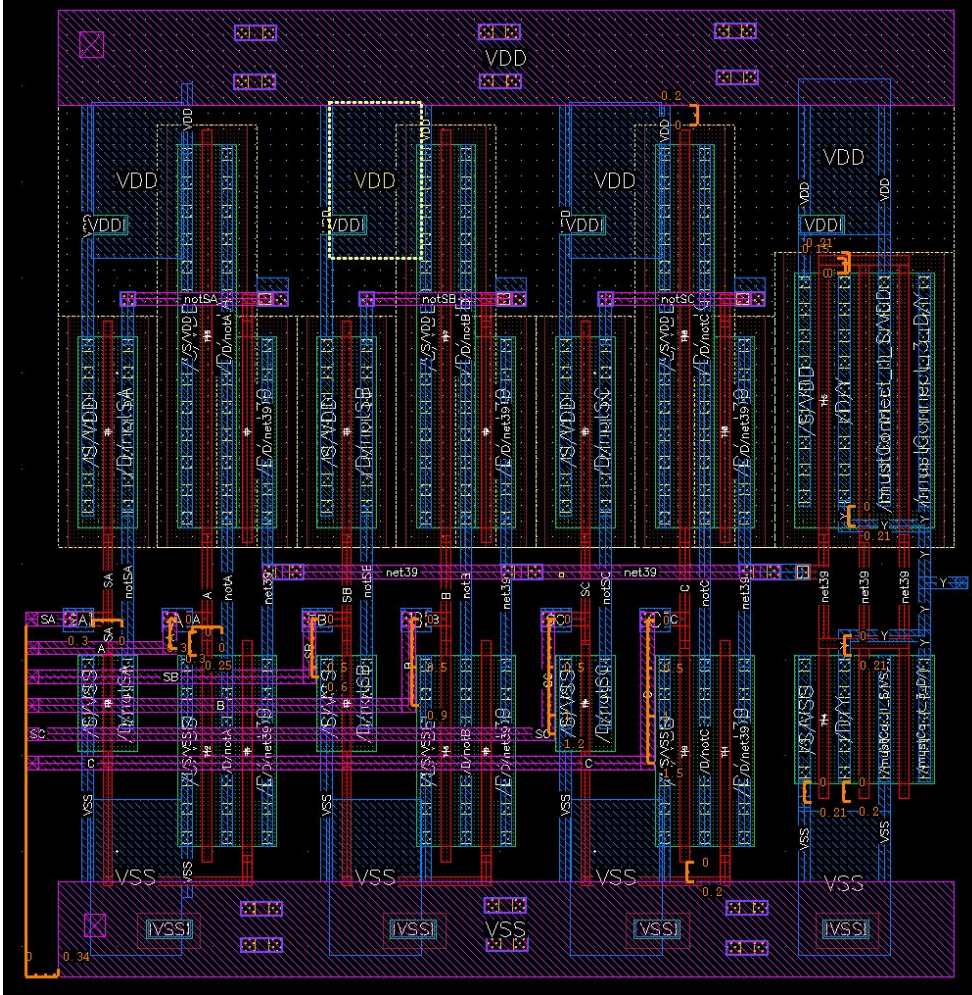- A snippet of 4 latches
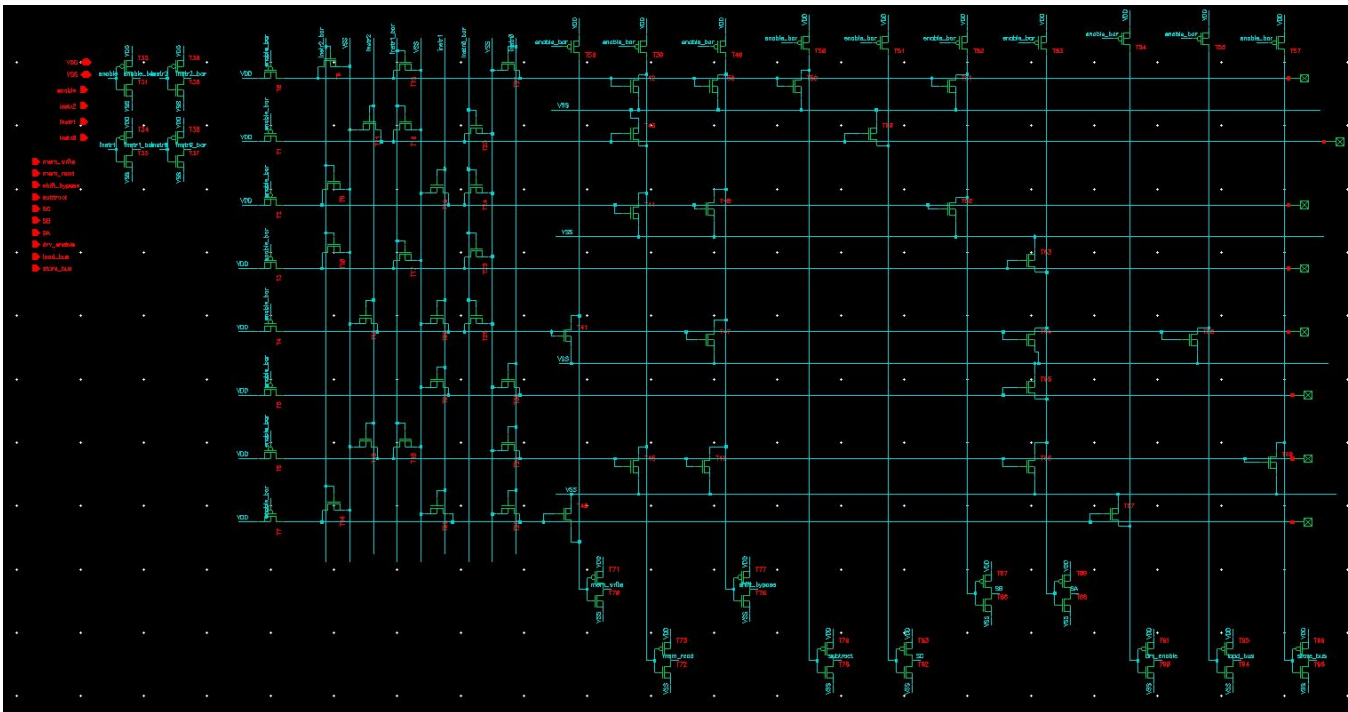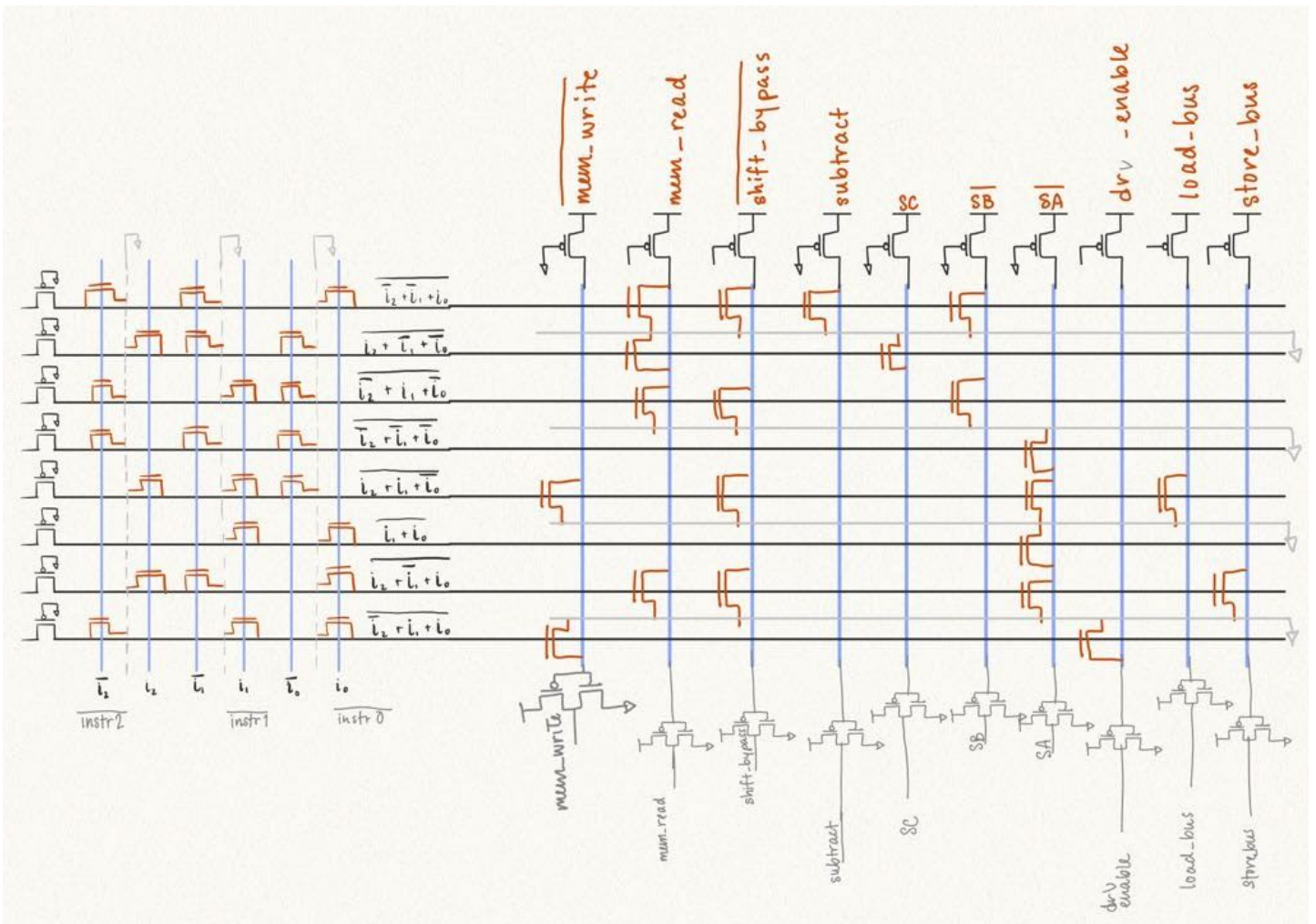

- Closeup of 1 one-bit latch
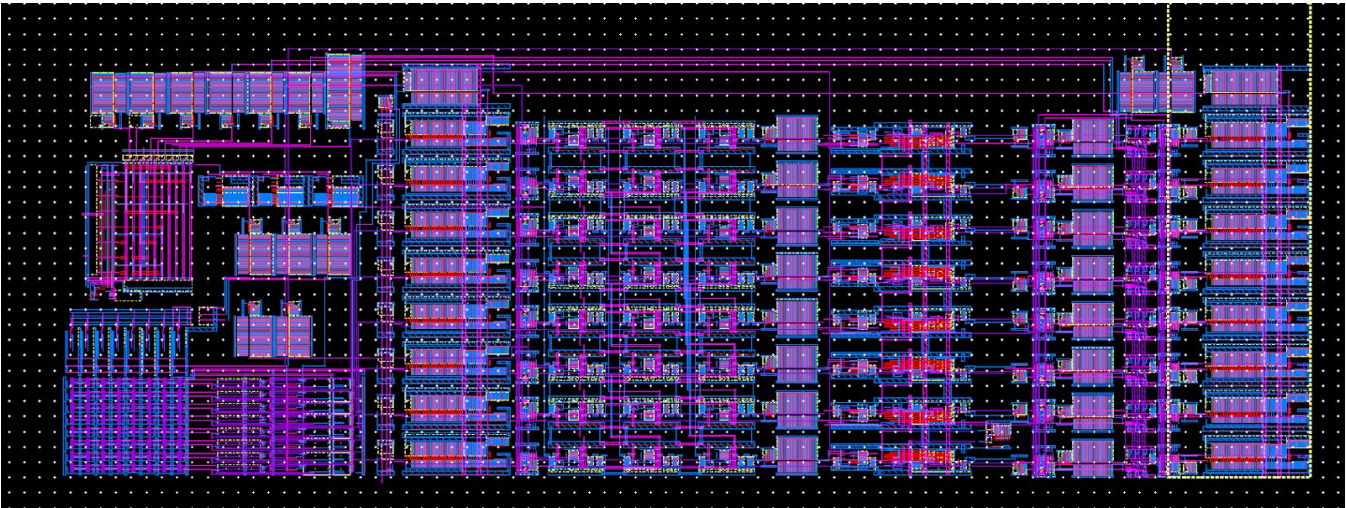
8-bit 3-1 MUX:

- Snippet of 5 3-1 one bit muxes

- Closeup of one 3-1 MUX

Instruction Set decoder with hand-layed-out- PLA…:

Voila!