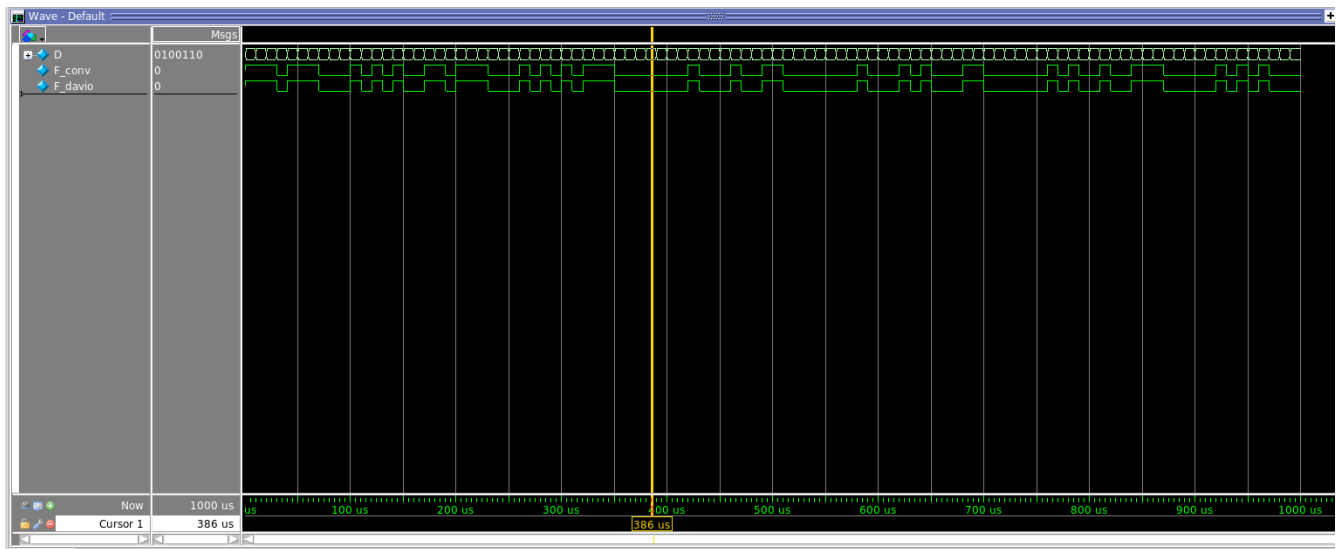


CME 433 – Lab 1

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1. CASE statements typically cause the synthesizer to create *binary* or *selector* multiplexers, while the synthesizer will typically create IF/ELSE statements with *priority* multiplexers.
2. Completed the expansion on paper (see attached PDF)
3. Completed verification of the conventional vs davio expansion (see image below)



4.

Shannon-Davio Expansion:

**Normal:** 7 LE's

**Performance**(aggressive): 7 LE's

**Power:** 7 LE's

**Area:** 7 LE's

Conventional:

**Normal:** 8 LE's

**Performance**(aggressive): 8 LE's

**Power:** 8 LE's

**Area:** 8 LE's

it appears there was a slight improvement in the davio expansion design, however the Quartus compiler is already too advanced and the different compiler settings yielded no differences within the two designs.