# Bus Contention

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- Since we have an open-drain output (pull line LOW or High-Z), many devices can be connected without causing damage during contention (multiple pulling LOW).
  - ↳ Thus we get an AND output because if any device pulls low, the entire line goes low.

## Push-Pull Scenario

- In this config, devices can actively drive HIGH (unlike the passive high in I2C) and actively pull low.

- If one device drives high and another drives low on the same line, our output is indeterminate. Also, push-pull devices typically use CMOS (remember NMOS and PMOS from Physics of EE), and those transistors have low resistances ($R_{DS}$) when in triode operation, so we're now dumping a huge amount of current during contention which can damage them.