

# Architecture: von Neumann; logic gates

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COSC 208, Introduction to Computer Systems, 2021-10-04

## Announcements

- Beyond classroom... update

## Outline

- Warm-up
- von Neumann Architecture
- Hardware building blocks
- Logic gates

## Warm-up

Q1: Fill-in the truth tables for all six types of gates

A	B	(A AND B)	(A OR B)	(NOT A)	(A NAND B)	(A NOR B)	(A XOR B)
0	0						
0	1						
1	0						
1	1						

## Building logic gates

Q2: How do you use AND and NOT gates to create a NAND gate?

Q3: How do you use OR and NOT gates to create a NOR gate?

Q4: How do you use NAND gates to create a NOT gate?

Q5: How do you use NAND gates to create an AND gate?