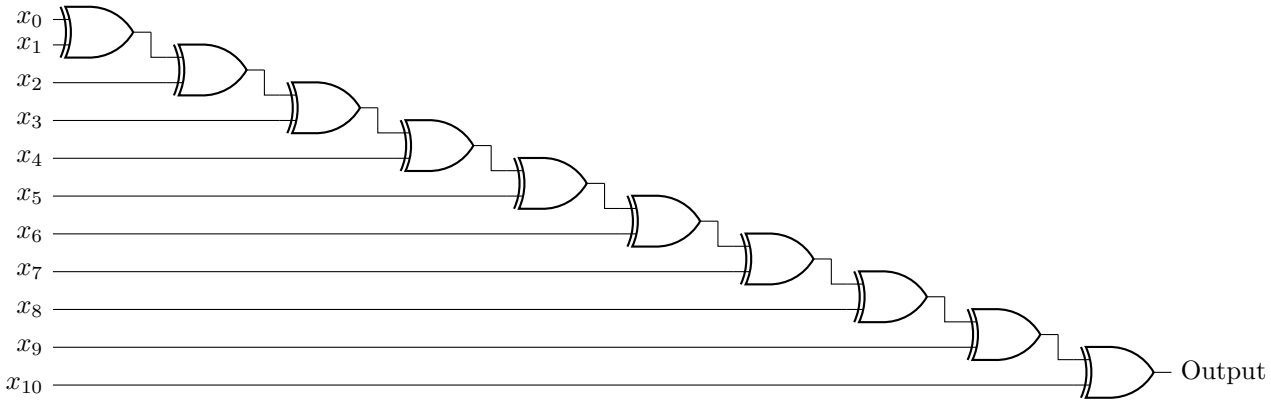
Cascaded vs Parallel XOR Logic

Cascaded XOR Logic: In a cascaded XOR configuration, the output of one XOR gate is connected to the input of the next XOR gate in a sequential manner. This creates a chain of XOR gates where each gate processes the result of the previous gate along with a new input. This configuration is simple and easy to implement but can introduce a delay as the signal propagates through each gate in the sequence.
Parallel XOR Logic: In a parallel XOR configuration, multiple XOR gates operate simultaneously on different pairs of inputs. The outputs of these gates are then combined in subsequent layers of XOR gates until a single output is produced. This arrangement can be more complex to design but offers the advantage of reduced propagation delay, as multiple operations are performed concurrently.

Cascaded 11 Input XOR Logic



Parallel 11 Input XOR Logic