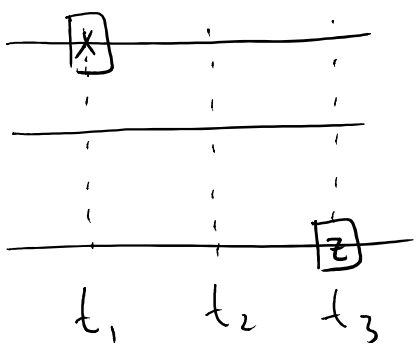


Error Correction

Motivation: hard to keep noise from affecting system

Simple Noise model:



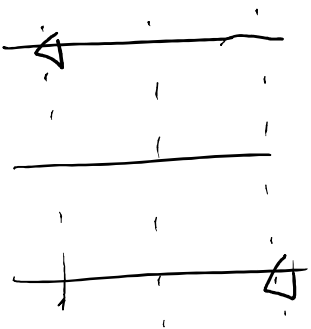
At every time step, there is a chance an unwanted gate occurs:

- With Prob $P_x \rightarrow X$ occurs
- " $P_y \rightarrow Y$
- $P_z \rightarrow Z$

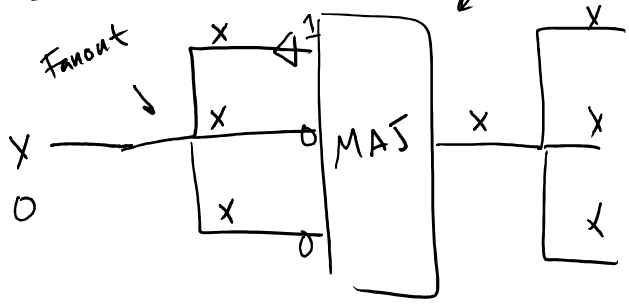
$1 - P_x - P_y - P_z \rightarrow$ No error occurs.

Classical version:

At every time step, there is a chance of NOT



Solution



If only one bit flips, can recover x

MAJ outputs value of majority of inputs