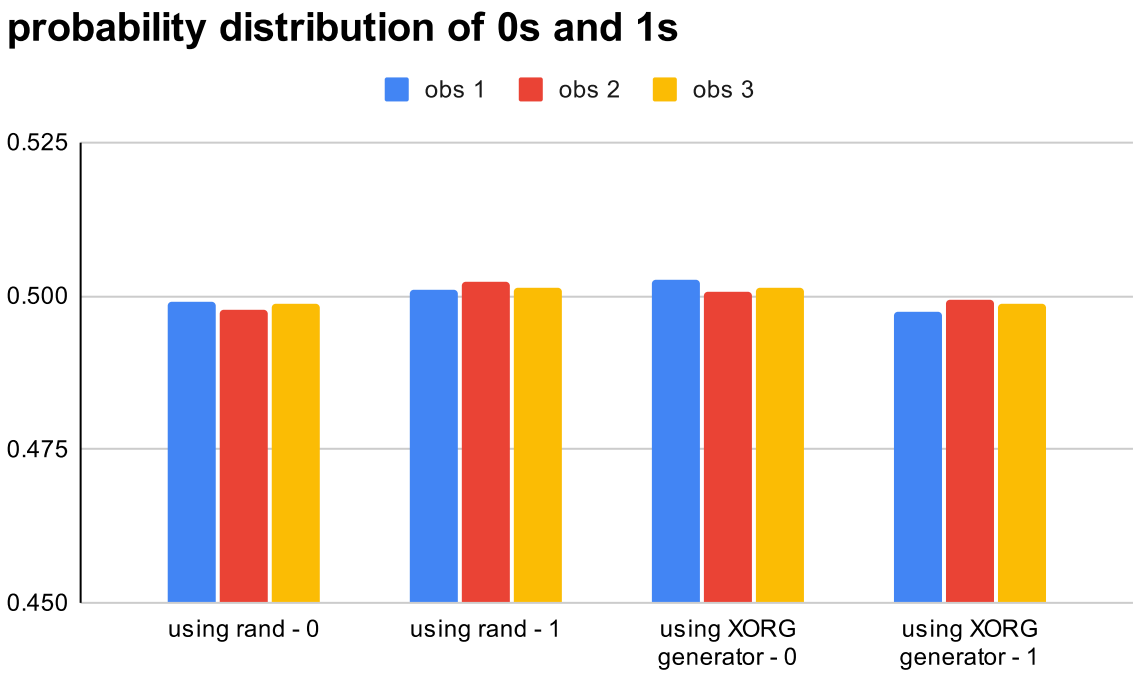
Report

5a) the following probaility distribution is observed for 3 different observations of the programme:

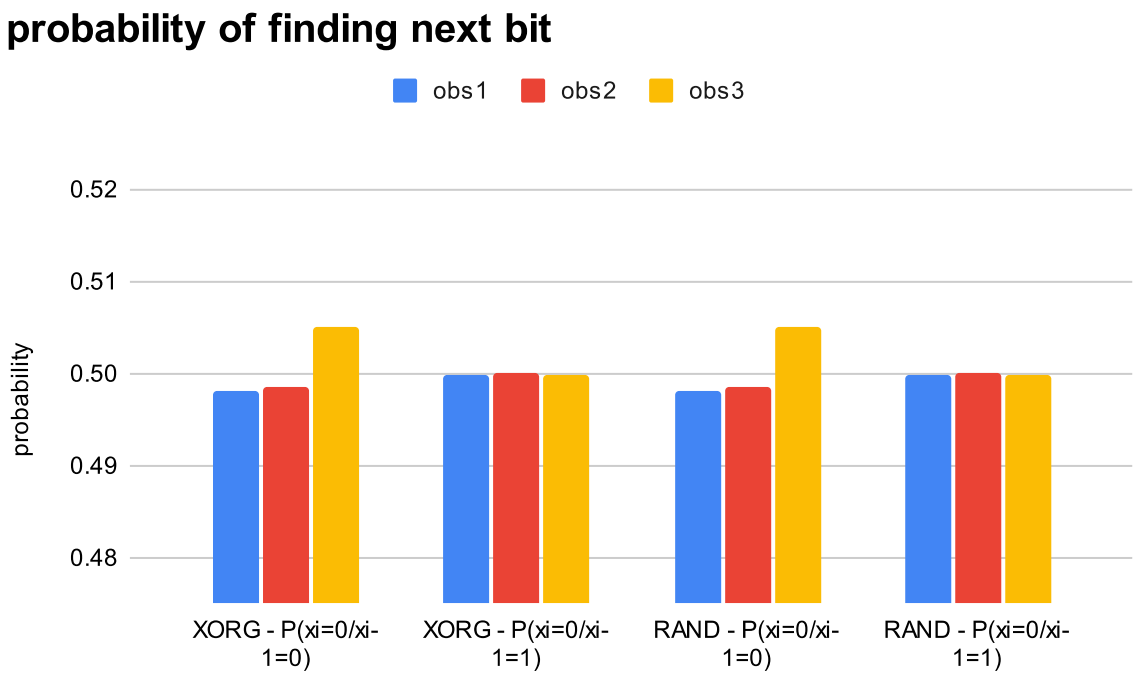


the XORG generator is as random as the random function. So the XORG can be used to encrypt data / produce random outcomes

Note: *the scale on y axis is from 0.45 to 0.525*

gsheet link - https://docs.google.com/spreadsheets/d/1dFWf5u3M7TnZOGWg0SMxkss1cbcJMe2h6z0jH2xd63k/edit?usp=sharing

5b) the following is observed for $P(x_i=0/x_{i-1}=0)$ and $P(x_i=0/x_{i-1}=1)$:



the probability of $x_i=0$ is almost 0.5 for both x_{i-1} =0 and 1 , so the programme is random enough and can be used for encryption stuff

gsheet link - https://docs.google.com/spreadsheets/d/1uy2ylTLvzoLLDp9wuJkPyTwpJ6pDUkJrpDFZNcLdfuQ/edit?usp=sharing