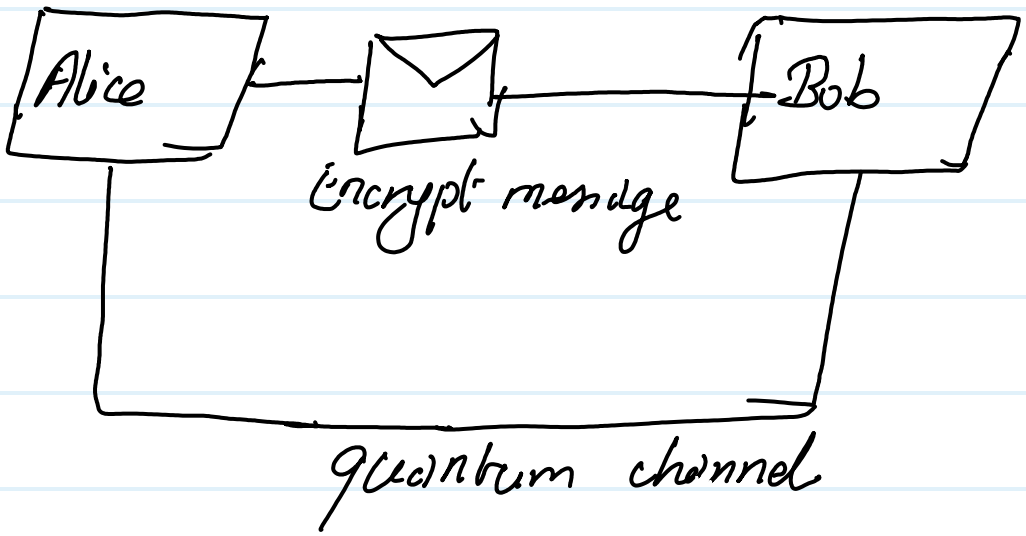
Message Encryption

let Message = "0111001101"



let Alice has 10 entangled qubit.
Then she gave the one qubit from each entangled pair to Bob

$$|\psi_{Alice}\rangle = \frac{|0\rangle + |1\rangle}{\sqrt{2}}$$

:) Alice measure her qubit be 1

the bob' qubit collapses and his measurement is also be 1.

Similarly,

if Alice measure 0 then Bob also measure 0.

* if Alice measurement be '0011001010' so, Bob also measure same sequence.

Encryption

Alice encrypt her measure using Bit wise XOR.

```
'0111001101'
⊕ 0011001010
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  0100000111
```
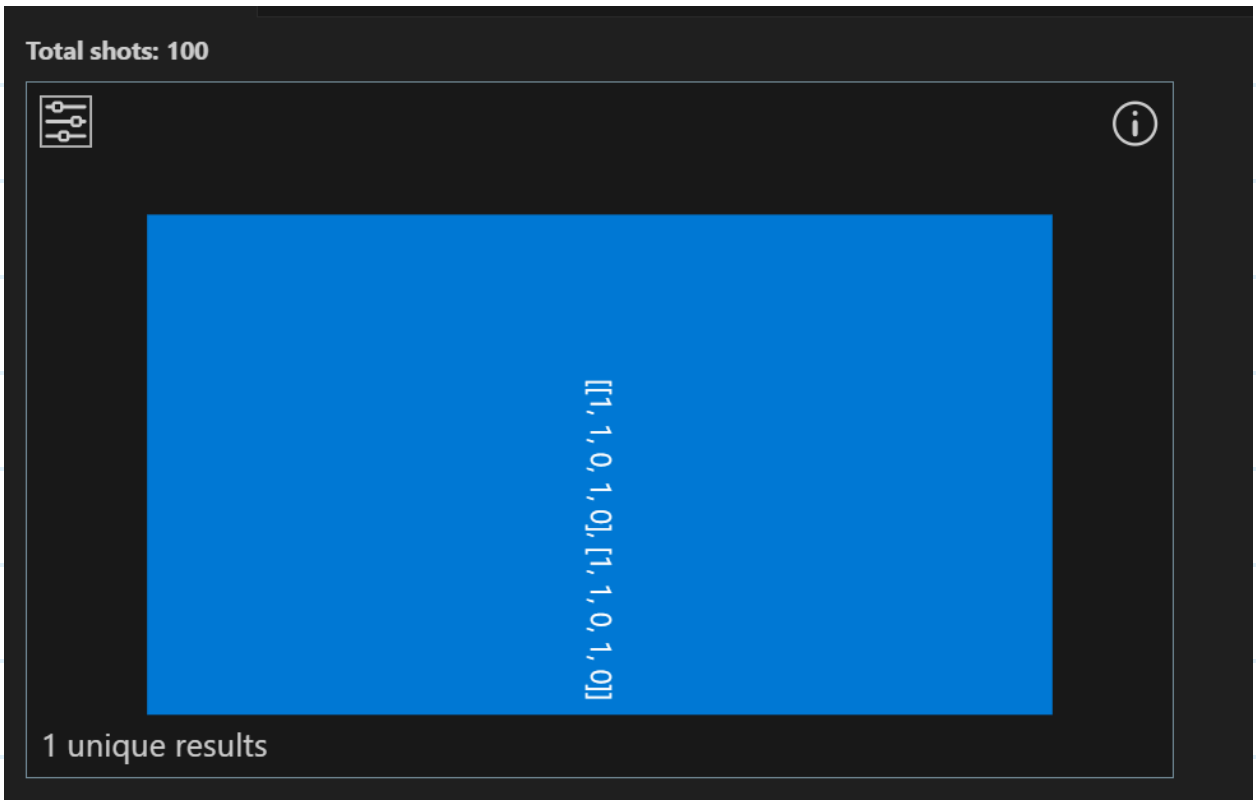

She mail this encrypted to Bob. then Bob measure his qubit and decrypt her message.

$$
\begin{array}{r}
01000011 \\
\oplus\ 00111010 \\
\hline
01111001
\end{array}
$$

Verification:

Alice message = 11010



For 100 shots, each time we get unique decrypt message. '11010'