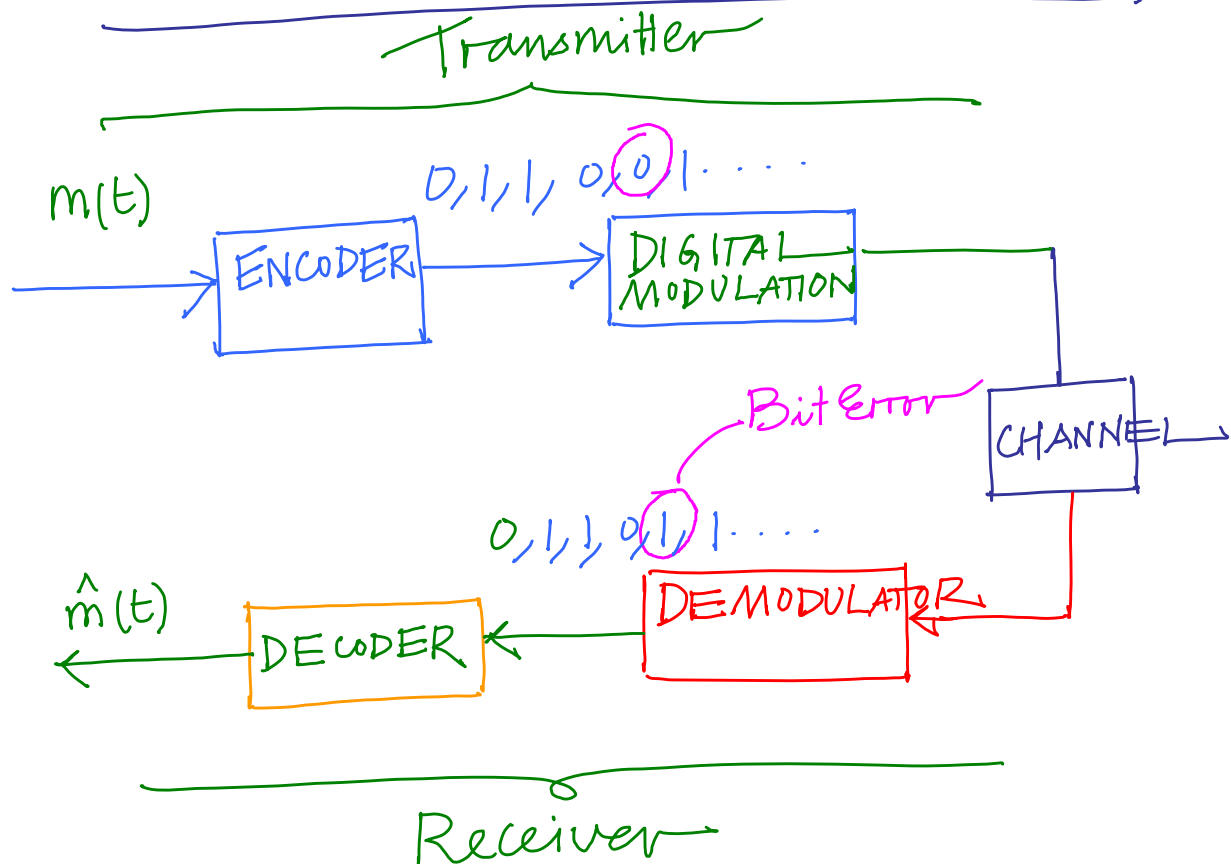


INTRODUCTION TO DIGITAL COMMUNICATION SYSTEMS

SCHEMATIC DIAGRAM :

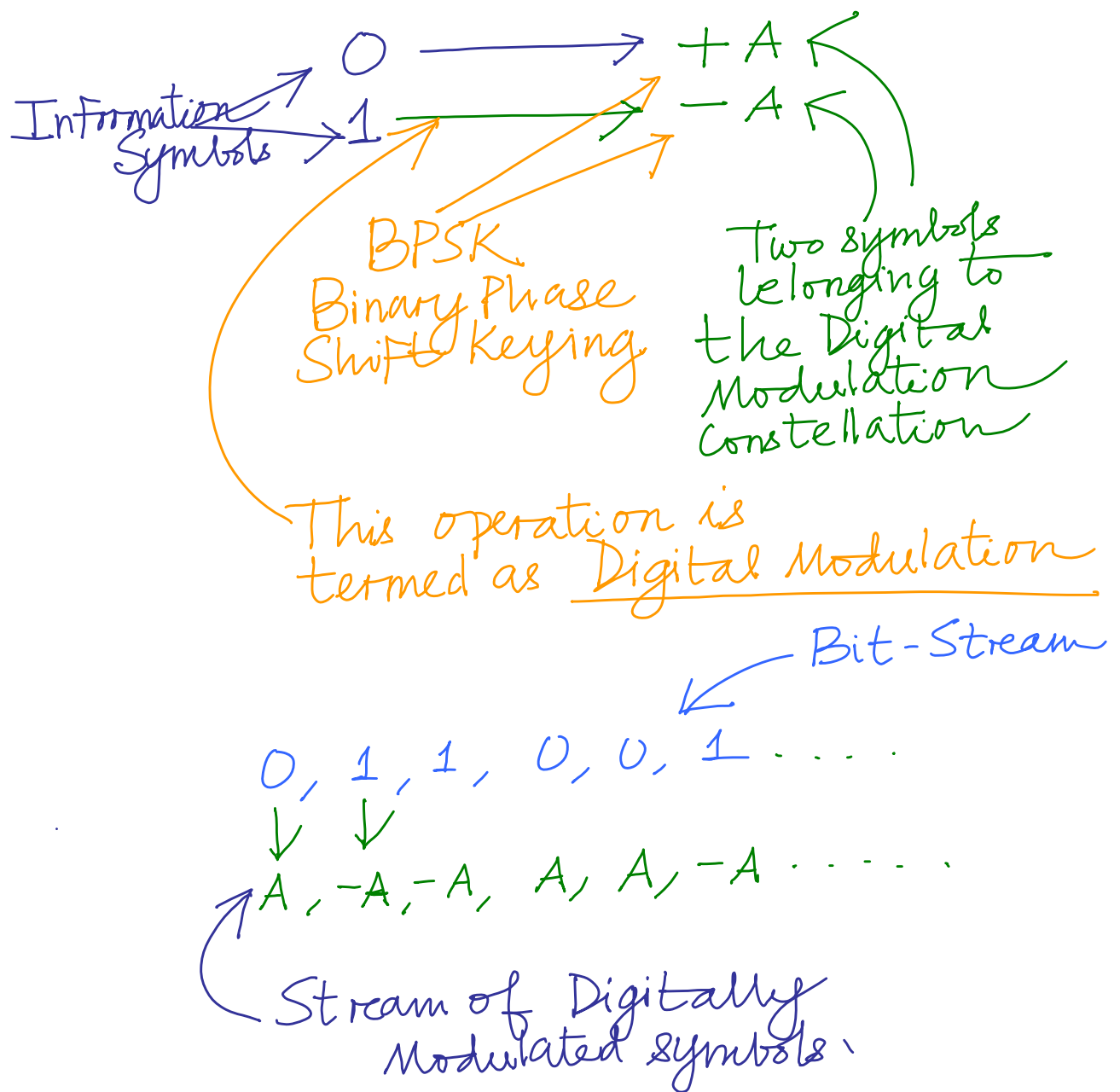


How to Design various modules?

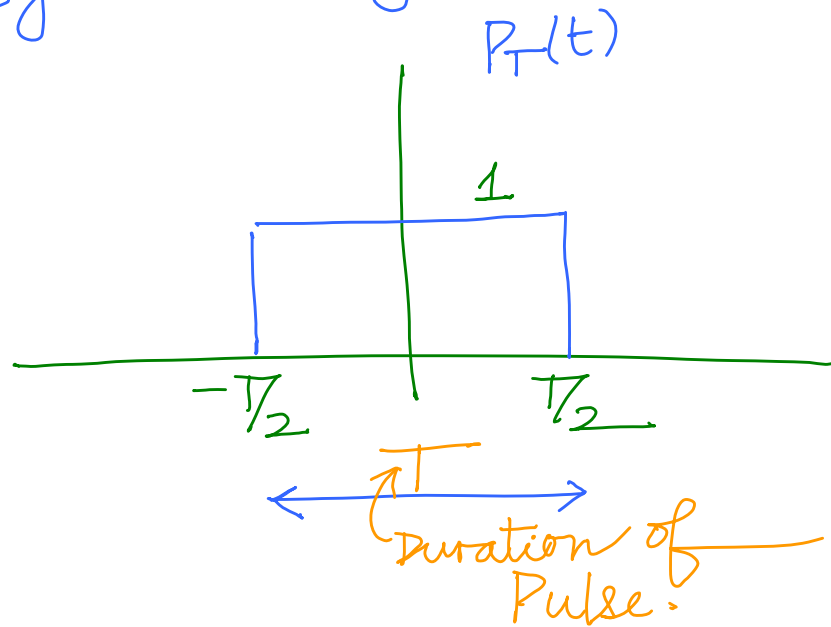
How to transmit? $\leftarrow$ Transmit Power
How to Receive? $\leftarrow$ Modulation
 $\leftarrow$ Receive Filter
 $\leftarrow$ Probability of Error

Transmitted signal corresponds to a series of symbols.

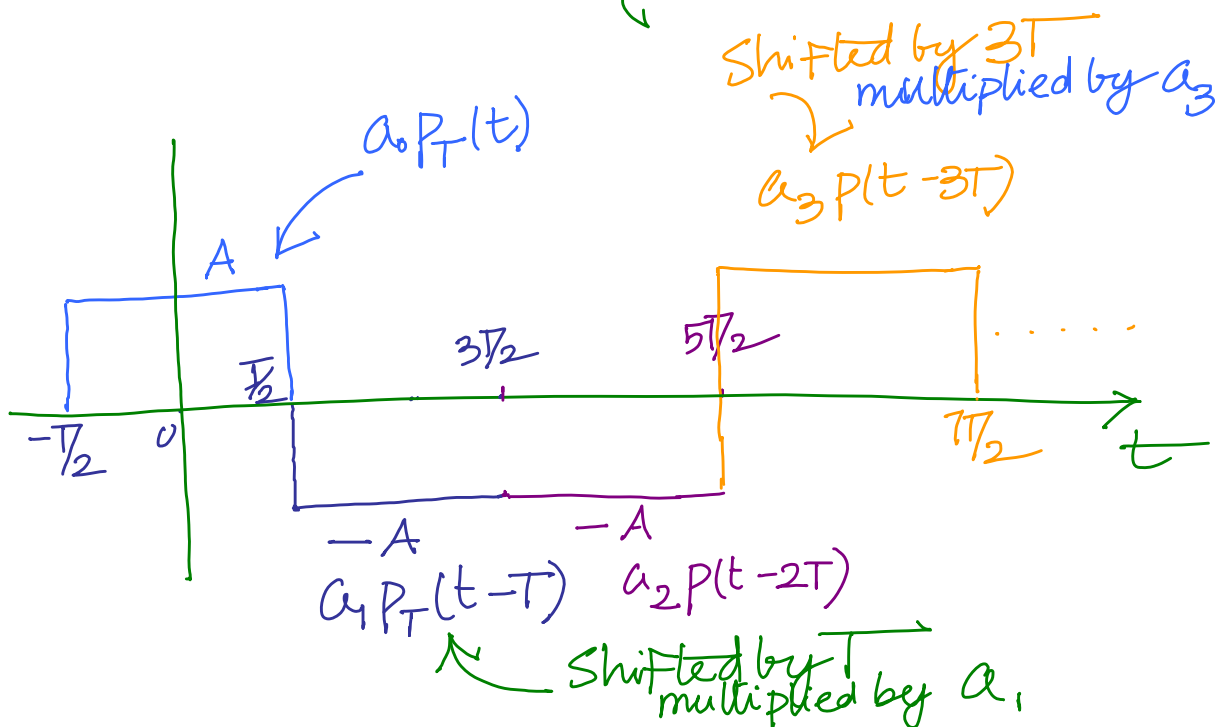
Simple Example:



Transmit the digitally modulated symbols using a pulse.



$$P_T(t) = \begin{cases} 1, & \text{if } |t| \leq T/2 \\ 0, & \text{otherwise.} \end{cases}$$



Therefore, for k^{th} symbol,

$$a_k P(t - kT)$$

k^{th} symbol

Any pulse

Shifted by kT

Net Transmitted Digital Comm
Signal is,

$$x(t) = \sum_{k=-\infty}^{\infty} a_k P(t - kT)$$

Structure of a
Typical Transmitted
Signal in a Digital
Communication System.