## LBC Complete Example

Linear Block Codes Complete example

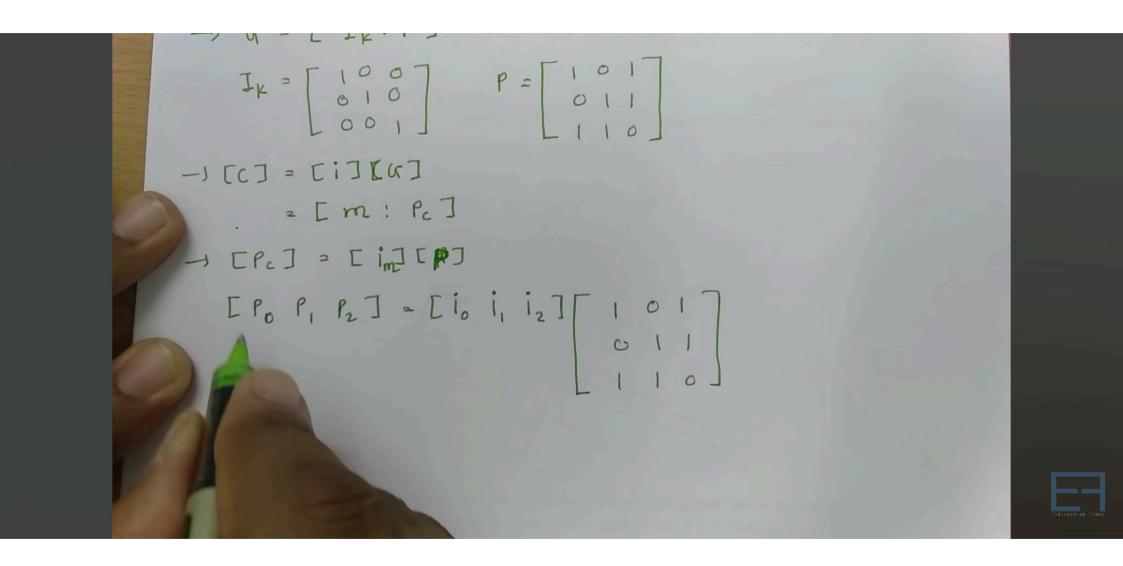
- For a (6,3) code, the generator matrix (x is  $K = \begin{bmatrix} 1 & 0 & 0 & 1 & 0 & 1 \\ 0 & 1 & 0 & 0 & 1 & 1 \\ 0 & 0 & 1 & 1 & 1 & 0 \end{bmatrix}$ 

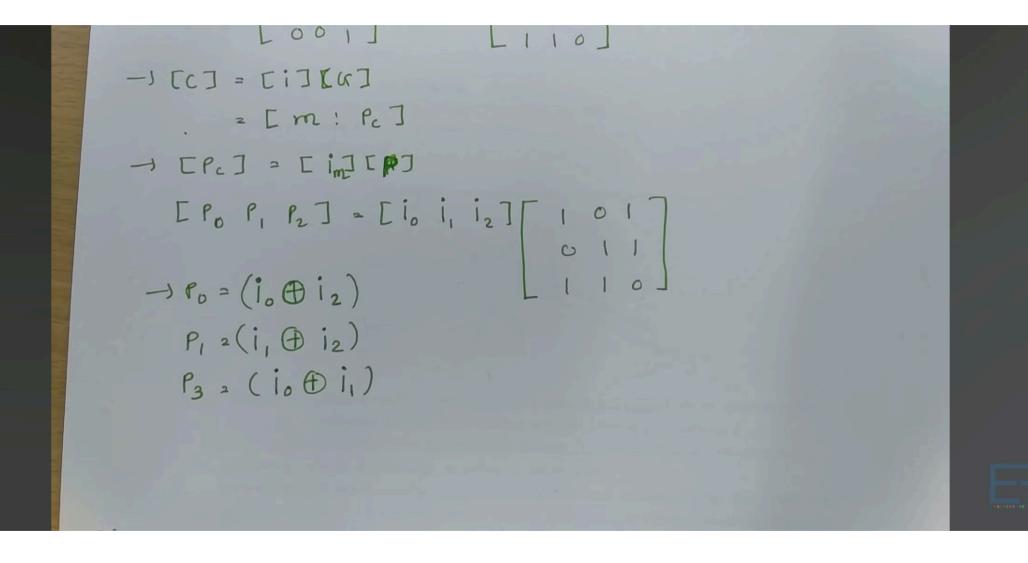
- Find @ All corresponding code vectors
  - 6 Minimum Hymming dost. " I min
  - @ Error detection & Error correction Capability.
  - @ Pasty Check matrix
  - ( Find error if received code is (100011)

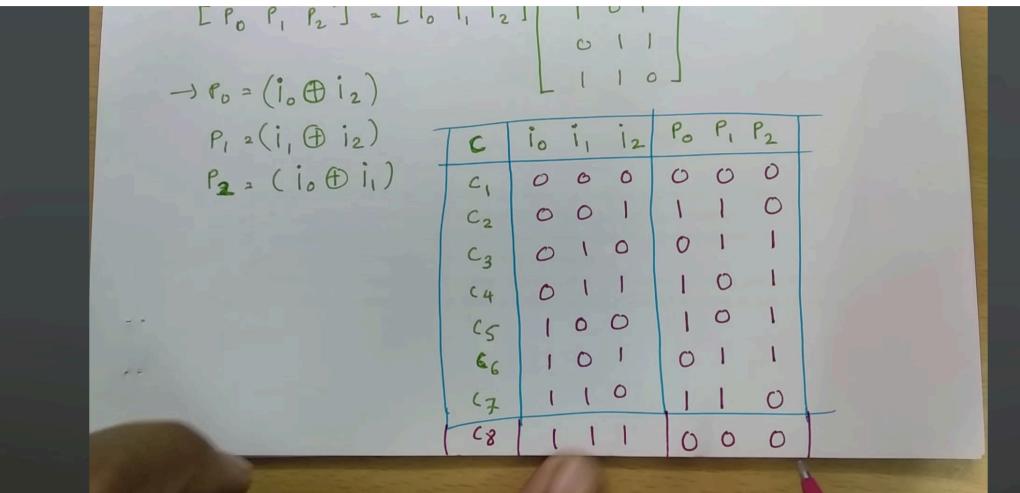


$$J_{k} = \begin{bmatrix} 100 \\ 010 \end{bmatrix}$$
  $P = \begin{bmatrix} 101 \\ 011 \end{bmatrix}$ 

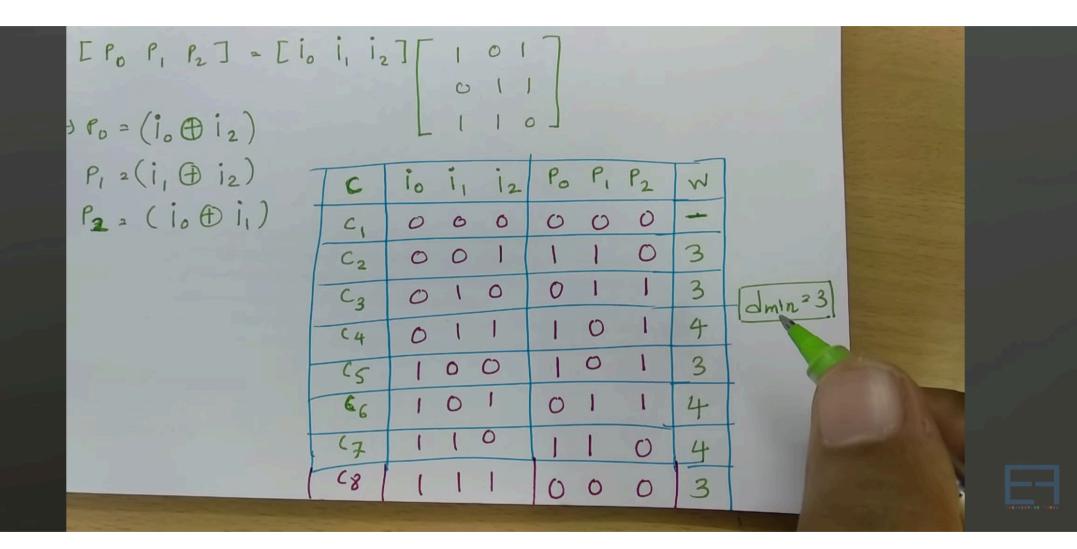


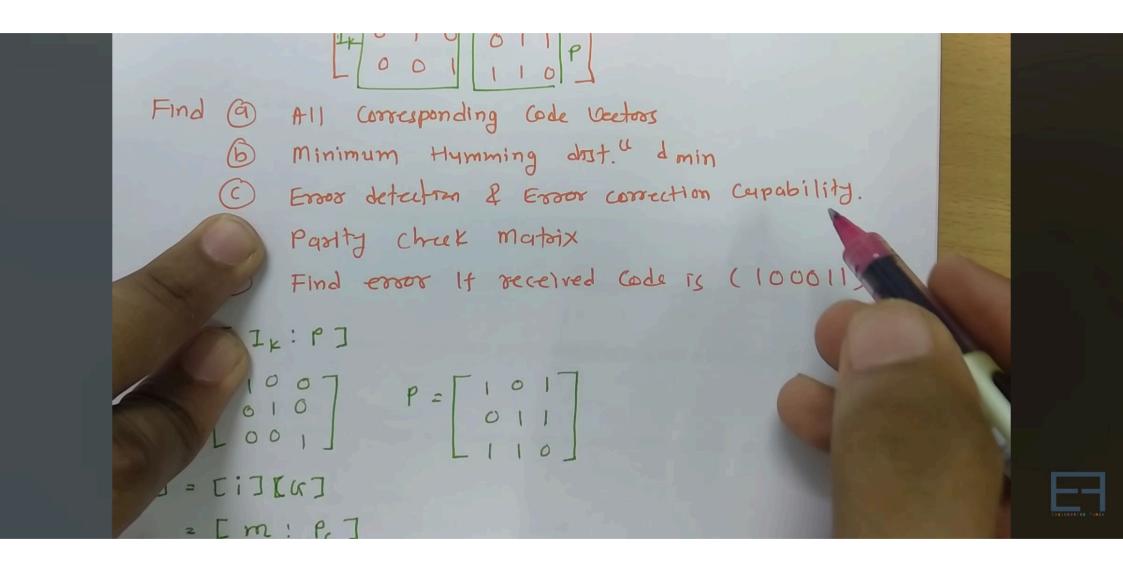


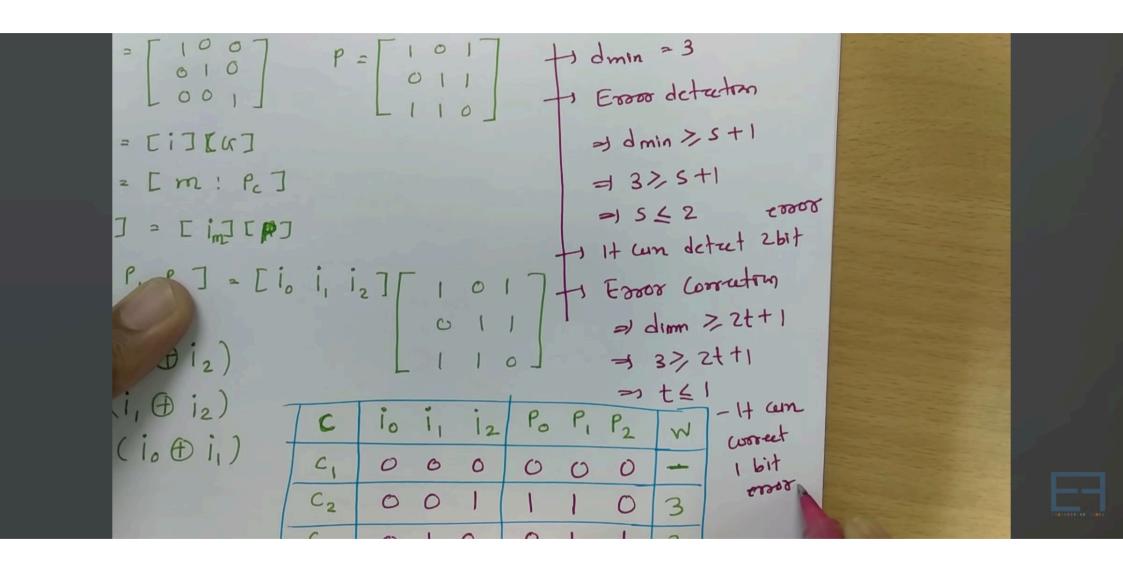














Find @ All corresponding code vectors

B Minimum Hymming dost. " d min @ Error detection & Error correction Capability. @ Pasty Chek Matrix (100011) [100]
P=[101] +1 dmin = 3

[010] +1 Error detection

[1][4]

=1 dmin > 5+1 [C] = [i] [K] = 375十1 2 [m!Pc] = 1562 2000

```
H = [ 1 0 1 1 0 0 7 0 1 ]
 [S] = [7][H]]
-) [7] = [1000011] | 5 = 7HT
 [HĪ] 2 [ 1 0 1 ]
0 1 1 0 1 1 0 1 0 0
                           = [100011][101
```

```
) [S] = [7][H]]
-) [7] = [1000011] | 5 = 7HT
                       = [100011][101
  [HI] 2
                       =[110]
```

