

Assignment 1 (57,58,59)

Show that the following errors in CRC are detectable if $P(X)$ follows the corresponding properties.

- All single-bit errors, if $P(X)$ has more than one nonzero terms
- All double-bit errors, as long as $P(X)$ has a factor with three terms
- Any odd number of errors, as long as $P(X)$ contains a factor of $(X+1)$
- Any burst error for which the length of the burst is less than or equal $n-k$, that is, less than or equal to the length of the FCS
- A fraction of error bursts of length $n - k + 1$; the fraction equals to $1 - 2^{-(n-k-1)}$
- A fraction of error bursts of length greater than $n - k + 1$; the fraction equals to $1 - 2^{-(n-k)}$

Assignment 2 (56,61)

Model Single-server Queues with exponential service times and Poisson (random) arrivals

Assignment 3 (62, 63)

In case of cellular wireless network, show that the reuse factor N can have the following values

$$N = I^2 + J^2 + (I \times J), I, J = 0, 1, 2, 3, \dots \text{ and } D/d = \sqrt{N}$$

D = minimum distance between centers of cells that use the same band of frequencies

d = distance between adjacent cells

Assignment 4 (53,54)

Read the following paper and prepare a presentation (ppt) of the paper.

1. Dynamic Source Routing for wireless Ad Hoc Networks

<http://www.cs.ucsb.edu/~ravenben/classes/290F-w05/papers/dsr-chapter00.pdf>