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Computer networks laboratory-ASSIGNMENT2

CALCULATIONS(SEE GRAPH BELOW):

- We ran the program for 100 times. We averaged out the number of callbacks obtained in each of the 100 programs.
- We did the above chunk for 4 times, in order to take care of the variability introduced by the srand(time(0)) and rand() function.
- The callbacks were measured for intervals of 0.05 probability of error introduction, starting from 0 up untill 0.95.

OBSERVATIONS:

- When probability of error introduction is 0, in each instance we get the average of 100 samples as 1. This is exactly as per our intuition, as no error means only the data packet can be transmitted correctly the first time itself.
- The change in number of callbacks is very small upto a probabilty of nearly 0.8. It shoots up drastically after 0.8.
- Change is very negligible in early stages because of low probabilty values coupled with the fact that only 2 bits can be flipped atmost by the noise in the medium.

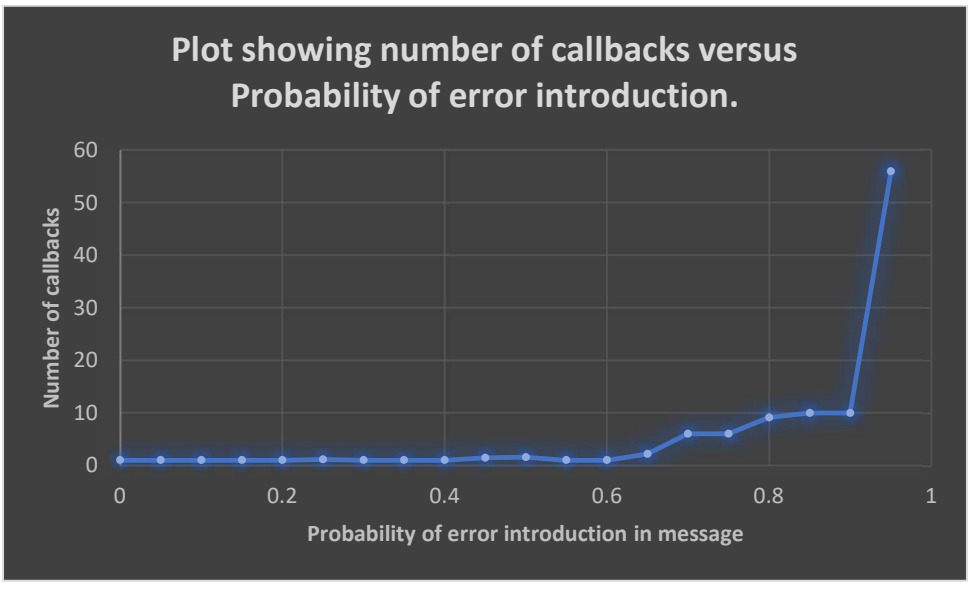
CONCLUSIONS:

- If we increase number of times we run our program, say 1 million times (using multithreading), we will get a more accurate average callback number.

- 0.8 is the threshold point of the graph above which number of callbacks increase drastically.

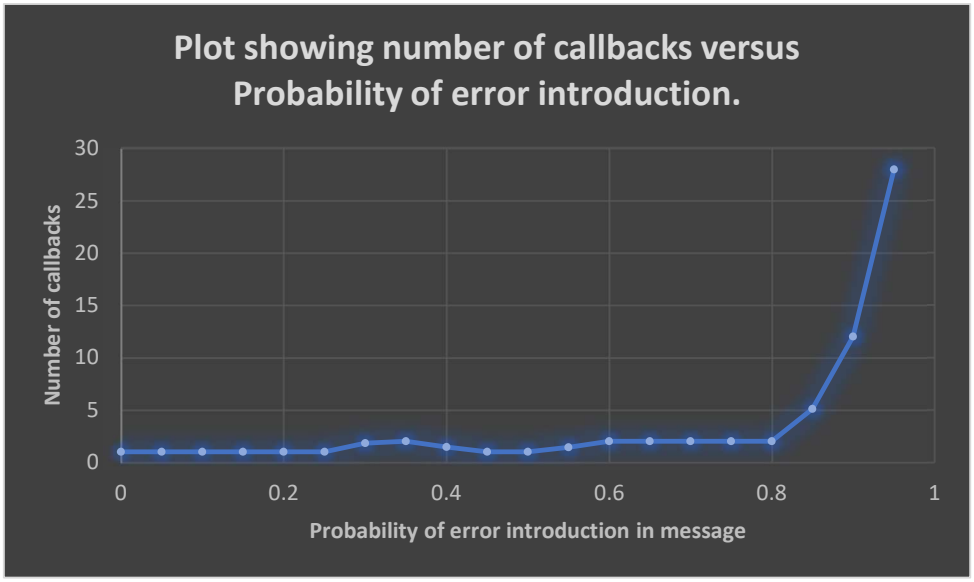
INSTANCE 1

ErrorProb	Callback
0	1
0.05	1
0.1	1
0.15	1
0.2	1
0.25	1.14
0.3	1
0.35	1
0.4	1
0.45	1.43
0.5	1.56
0.55	1
0.6	1
0.65	2.2
0.7	6
0.75	6
0.8	9.12
0.85	10
0.9	10
0.95	56



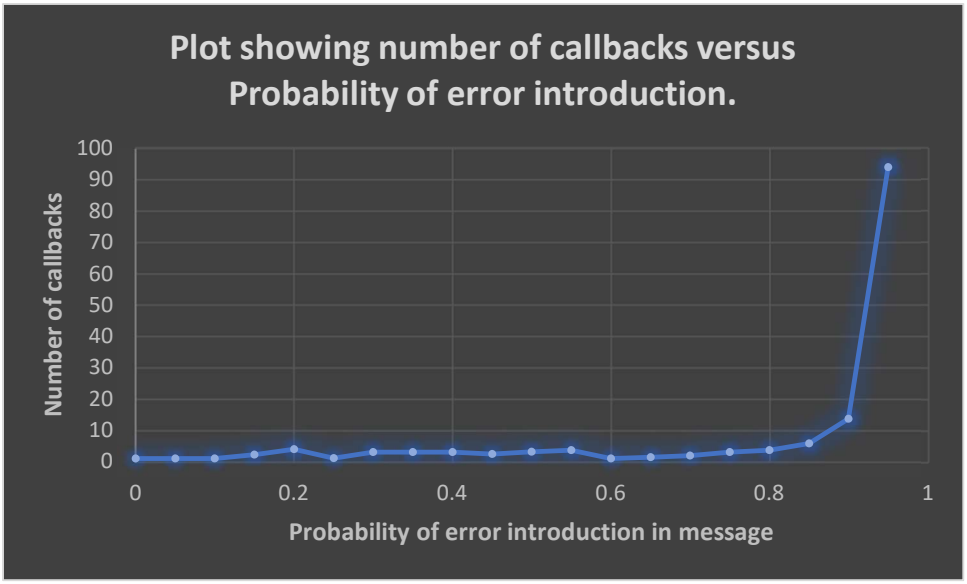
INSTANCE 2

ErrorProb	Callback
0	1
0.05	1
0.1	1
0.15	1
0.2	1
0.25	1
0.3	1.82
0.35	2
0.4	1.46
0.45	1
0.5	1
0.55	1.43
0.6	2
0.65	2
0.7	2
0.75	2
0.8	2
0.85	5.11
0.9	12
0.95	28



INSTANCE 3

ErrorProb	Callback
0	1
0.05	1
0.1	1
0.15	2.2
0.2	4
0.25	1.06
0.3	3
0.35	3
0.4	3
0.45	2.43
0.5	3.1
0.55	3.63
0.6	1
0.65	1.42
0.7	1.94
0.75	3
0.8	3.63
0.85	5.78
0.9	13.68
0.95	94



INSTANCE 4

ErrorProb	Callback
0	1
0.05	1
0.1	1.45
0.15	1.77
0.2	1
0.25	1
0.3	1
0.35	1
0.4	1
0.45	1.93
0.5	2.93
0.55	1.74
0.6	1
0.65	1
0.7	2.98
0.75	9
0.8	9
0.85	9
0.9	14
0.95	17.78