



Assignment 1: Hands on “Data Link Layer”

(Ref. 3-39)

PROGRAMMING LANGUAGE:

Python, C++, or Java.

GROUPS:

1 member up to 4 members.

SUBMISSION:

Code file & Demo file [“*.exe” file, snapshot, GIF] shall be pushed to team’s GitHub repository.

- Working on **GitHub**, everyone’s work will be recorded.

DEADLINE:

Thursday, November **22nd**, 2018.

DESCRIPTION:

The goal of this lab exercise is to implement an error-detection mechanism using the standard CRC algorithm described in the text. Write two programs, **generator** and **verifier**.

- **The generator program** reads from standard input a line of ASCII text containing an m-bit message consisting of a string of 0s and 1s. The second line is the k-bits polynomial, also in ASCII. It outputs to standard output a line of ASCII text with (m+k) 0s and 1s representing the message to be transmitted. Then it outputs the polynomial, just as it read it in.
- **The verifier program** reads in the output of the generator program and outputs a message indicating whether it is correct or not.
- Finally, write a program, **alter**, that inverts 1 bit on the first line depending on its argument (the bit number counting the leftmost bit as 1) but copies the rest of the two lines correctly.

By typing

generator <file | verifier

you should see that the message is correct,

but by typing

generator <file | alter arg | verifier

you should get the error message.