



National Institute of Technology,  
Srinagar

Department of Information Technology

## Programming Assignment Report Line Encoding

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### Team Members:

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<u>Enrollment Number:</u>	2019BITE016	2019BITE014

# Line Encoder and Scrambler

## 0.1 Objective

- Implement Line coding encoder and scrambler with random digital data generator
- Line coding schemes implemented: NRZ-L, NRZ-I, RZ, Manchester, Differential Manchester, AMI.
- Scrambling schemes implemented: Block-Coding ,B8ZS ,HDB3.

## 0.2 Assumptions

- Random Functions have different probability options for changes of 0's and 1's.
- Logic of each type is mentioned in the option itself.
- The graph above shows Original Data and graph below shows Encoded Data.
- Scrambling logic is working on AMI encoded form of Original Data

## 0.3 Prerequisites

- Language: C++ (c++17)
- External Libraries used: GLFW,GLAD for implementing OpenGL
- IDE:Visual Studio 2019

### References

- <https://www.youtube.com/watch?v=45MlykWJ-C4>
- <https://docs.microsoft.com/>
- <https://stackoverflow.com/>
- <https://www.khronos.org/opengl/wiki/>

Ignore Any Extra output in the code as some debug symbols might have made to release.