Name | Enrollment:

1. Afsheen Sajad | 2022BITE048
2. Sibgat Farooq | 2022BITE010

Programming Language Used: Python

Libraries Utilized in the Assignment:

1. Matplotlib
2. Numpy
3. OS library

Project Overview:

In this assignment, we organized the code by creating separate files for each encoding scheme, which are then invoked based on user input in the main file using file handling operations. The encoding schemes implemented include:

- **Digital Encoding Schemes:** NRZ-L, NRZ-I, Manchester, Differential Manchester, and AMI (Alternate Mark Inversion)
- **Scrambling Techniques:** B8ZS and HDB3
- **Modulation Techniques for Analog Input:** PCM and DM

Upon starting the module, the user is prompted to select either analog or digital input. Based on this selection, the module then requests specific data input, applies the chosen encoding or modulation technique, and displays the corresponding plot. Additionally, for each user input, the longest palindrome within the data stream is identified and outputted.

Resources Consulted:

1. ChatGPT (for guidance on using specific library functions)
2. https://github.com/Shahidfarooq438/Line-Encoding-and-Modulation-Techniques