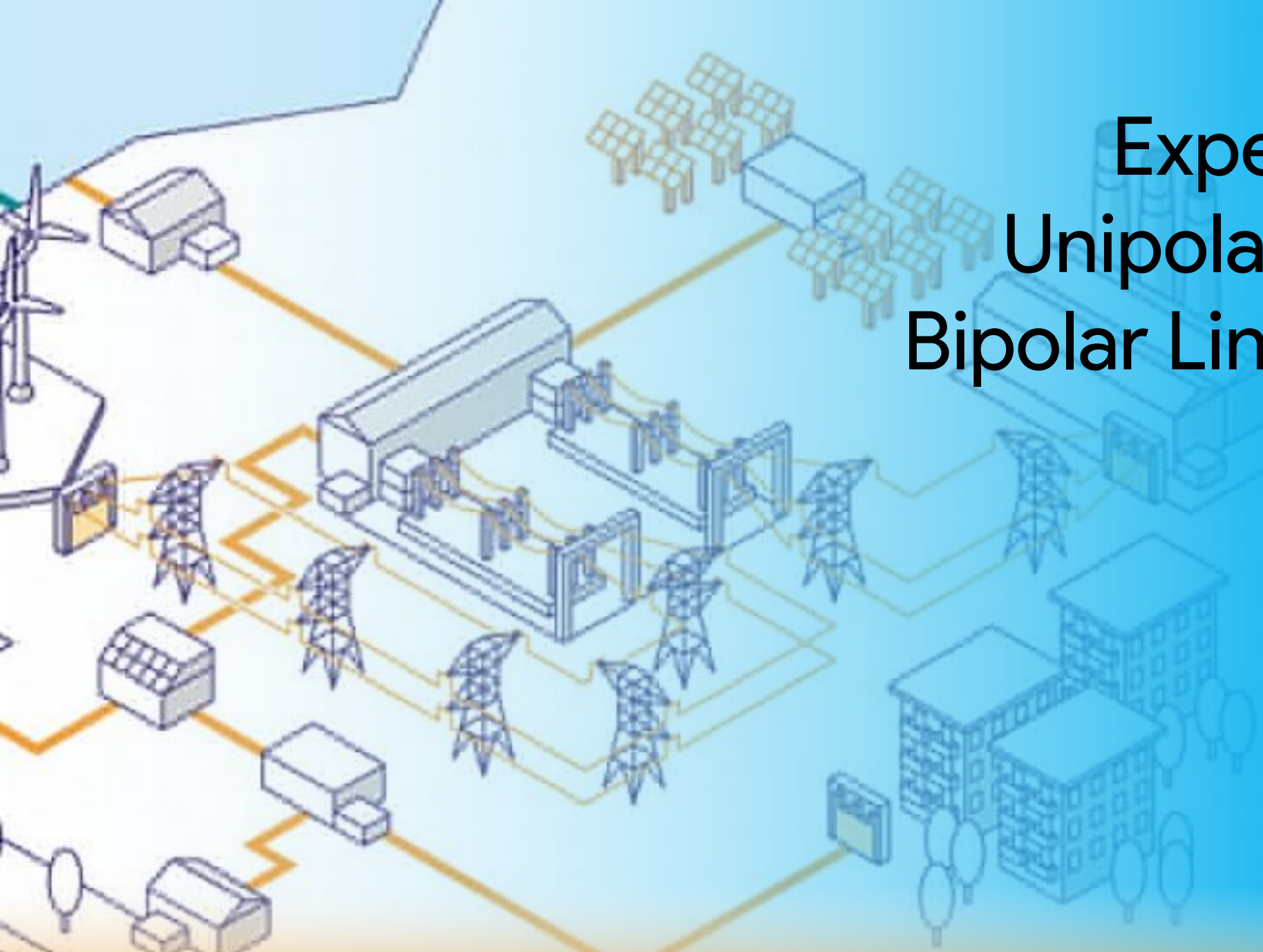


Experiments on Unipolar, Polar and Bipolar Line Encoding Schemes

TEAM Kaabil

Anudit Nagar
E18CSE024

Abhimanyu Banerjee
E18CSE005

Computer Science Engineering Department, Bennett University, Greater Noida, U.P.

Introduction

1

During Transmission of data from source to destination the transmitting signals may undergo attenuation and distortion.

2

Need to match the properties of transmitted signal as per the communication media for which digital data can be converted into digital signals.

3

Various Uni-polar, Polar and Bi-polar line encoding techniques are used for digital data to digital signal conversion.

Objectives

1. Implementation of various Line encoding techniques through a Virtual lab experience.

2. Providing a simple and optimized interface so that it can be used by people who are just starting to venture out in the field of signal encoding

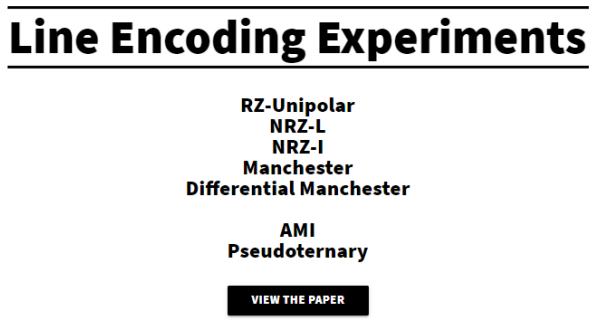
Technological Resources Used

Visual Representation

Project Stack

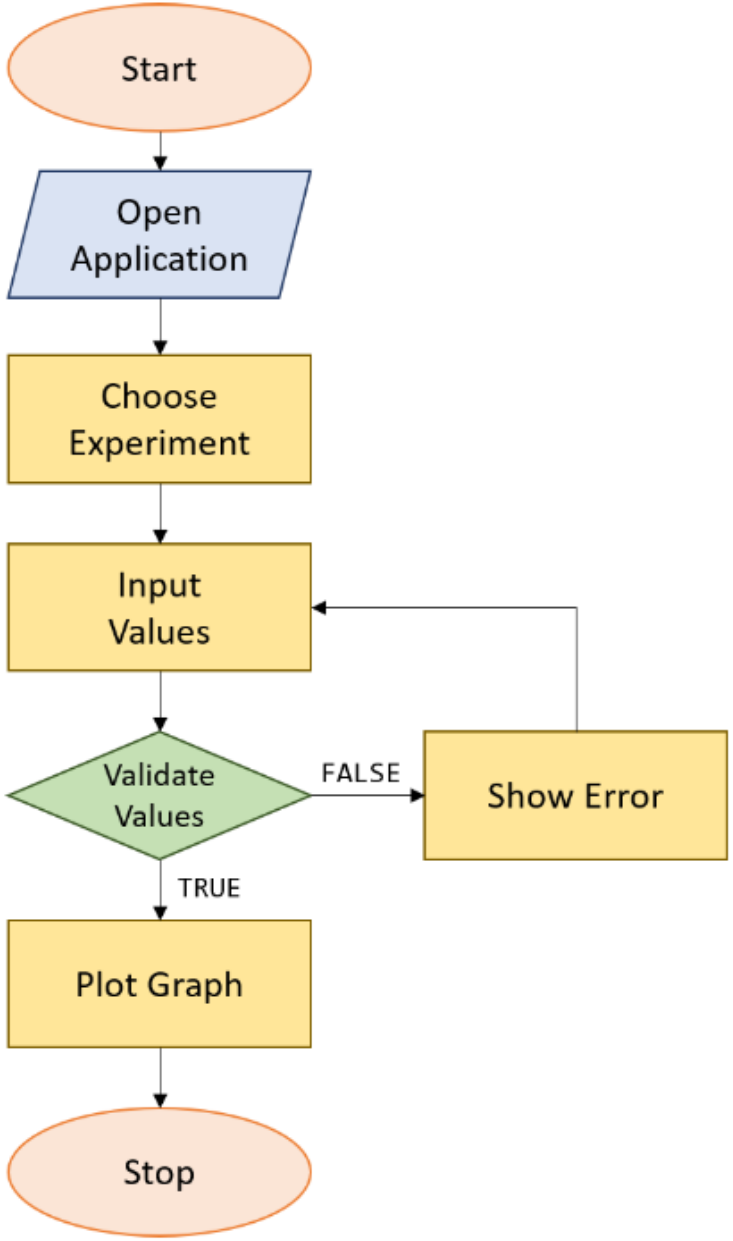
Deployment Strategy

Methodology

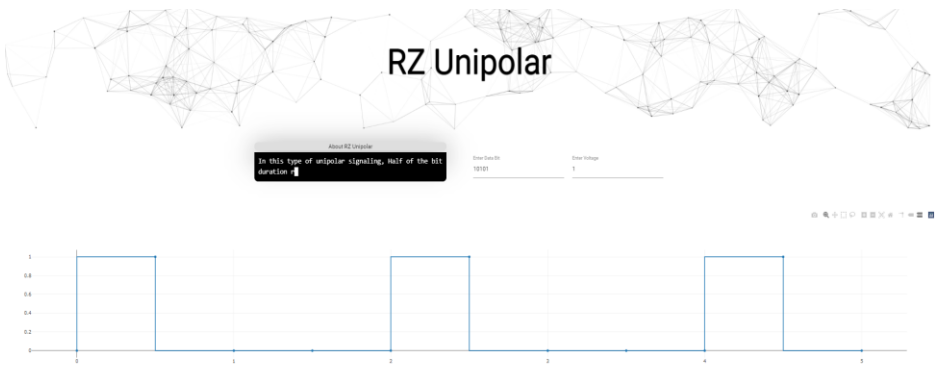


When the user **starts the application**, they are presented with a **central dashboard** with various **experiments listed** that are available to perform. Here they can **choose whichever encoding scheme** they would like to experiment with and the application will take them to a **dedicated space** where the experiments **for that specific encoding** can be carried out.

Flow of the Project

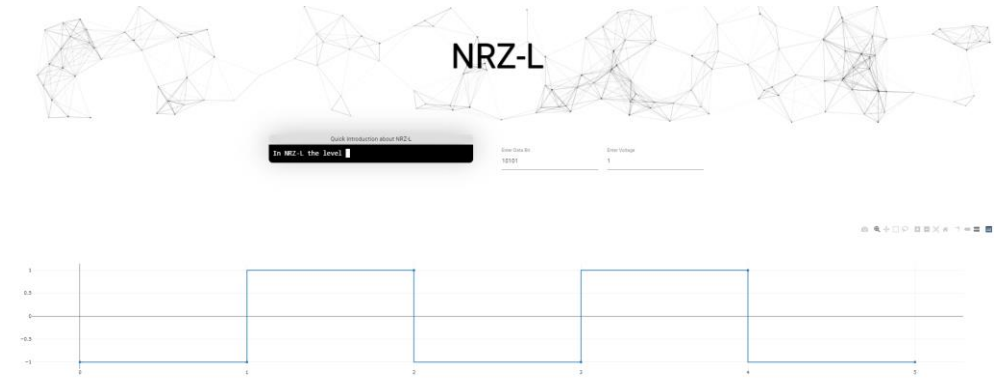


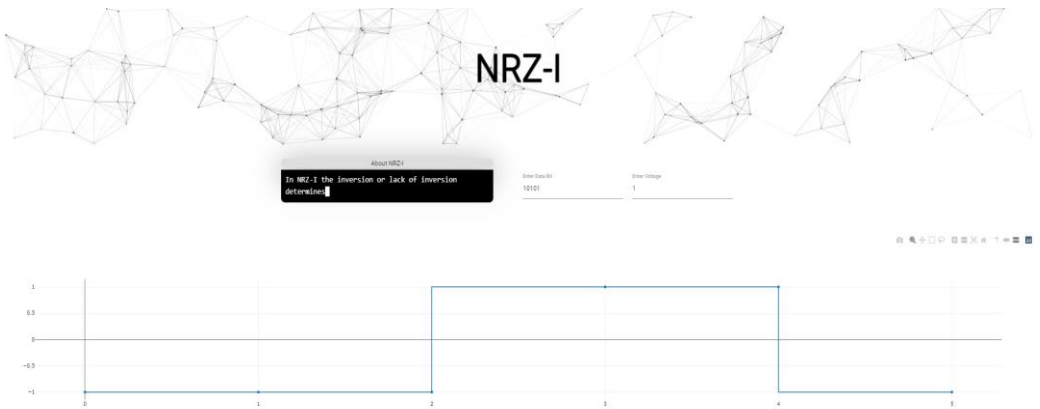
Results Achieved

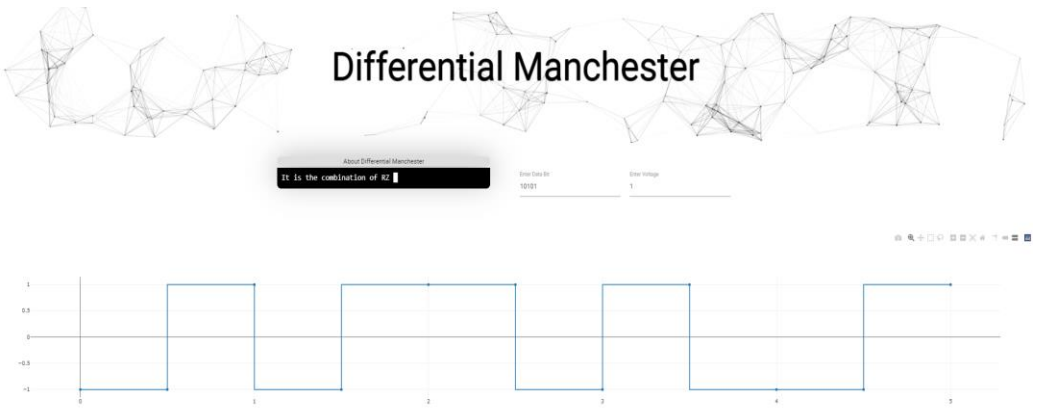


- **Performance improvements** and **cross platform compatibility** allowing anyone with an internet connection to perform experiments online using a virtual lab experience.
- It removes the **hassle of installing dependencies** and configuring a **development environment** making the platform **accessible to everyone**.
- It offers advanced features like **live updates** and **in-browser voltage control**

Results Achieved





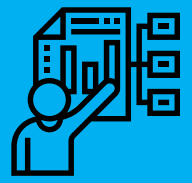


Results Achieved

Bipolar Encoding Schemes

AMI

Pseudoternary



Conclusion

This project showcases an advanced **mechanism for line encoding experimentation**

It brings **features** like *cross-platform compatibility*, *live-updates*, *dynamic voltage control*, *modern plotting libraries* with granular control of generated graphs and the ability to *save results* for future use.

These advanced **features are presented in a simplistic manner** to make them simple and accessible by everyone.

These advanced **features are presented in a simplistic manner** to make them simple and accessible by everyone.

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Thank You