

DOCUMENTATION

Project Documentation for LDU Factorization Calculator

1. Project Overview

- Project Name: LDU Factorization Calculator
- Description: This project aims to create an interactive web tool to calculate the LDU factorization of matrices of arbitrary dimensions. It provides detailed, step-by-step output for educational purposes.
- Technologies Used: HTML, CSS, JavaScript, Git for version control.
- Motivation: To enhance users' understanding of matrix decompositions by breaking down the LDU factorization process.

2. Meeting Information

- Date: October 28, 2024
- Time: 7:00 PM to 7:40 PM
- Duration: 40 minutes
- Participants: All team members were present
- Summary: Key points discussed included project goals, features, and individual responsibilities.

3. Meeting Agenda

- Define and discuss the core functionality of the LDU calculator.
- Assign tasks related to UI/UX, JavaScript logic, and matrix computation.
- Set milestones and deadlines for each stage of development.
- Establish documentation and version control best practices using Git.

4. Project Features

- LDU Factorization Calculator: Calculate LDU factorization for matrices of arbitrary dimensions.
- Interactive UI: User-friendly interface for matrix input and result visualization.
- Responsive Design: Compatible with both desktop and mobile devices.

5. How to Clone the Repository

- Step 1: Open your terminal or command prompt.
- Step 2: Navigate to the desired directory on your local machine where you'd like to save the project.
- Step 3: Clone the repository by running the following command:

git clone <https://github.com/bocchi277/LDU.git>

- Step 4: Navigate to the cloned repository folder:

```
cd [repository-folder-name]
```

- Step 5: You can now open the project in your code editor to explore or edit.

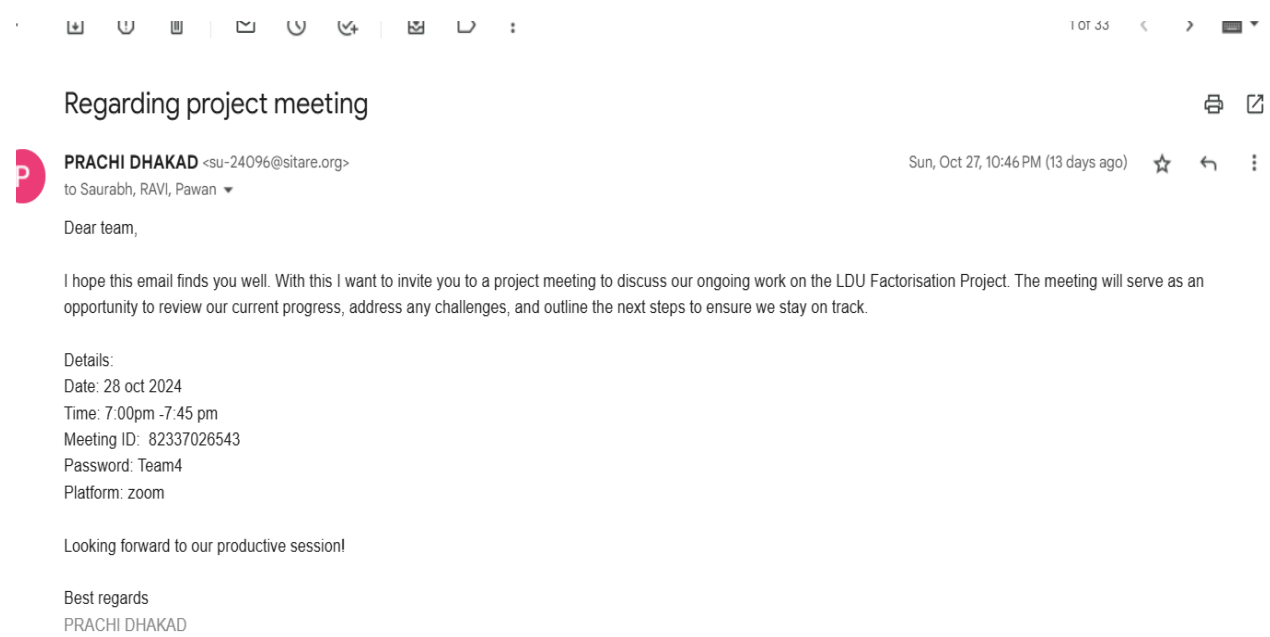
6.Meeting Summary

Key Discussions

1. Feature Review: Discussed the efficiency and reliability of the implemented features.
2. Challenges: Highlighted stability issues with large matrices and the need for further optimization.
 - Numerical Stability: Managing precision and preventing rounding errors in large-scale matrices was complex.
 - Performance Optimization: Balancing efficiency and computational resource usage required careful algorithm tuning.
3. Proposed Solutions:
 - Integrate pivoting techniques for enhanced numerical stability.
 - Research parallel computation techniques for performance improvements.

Visual Records

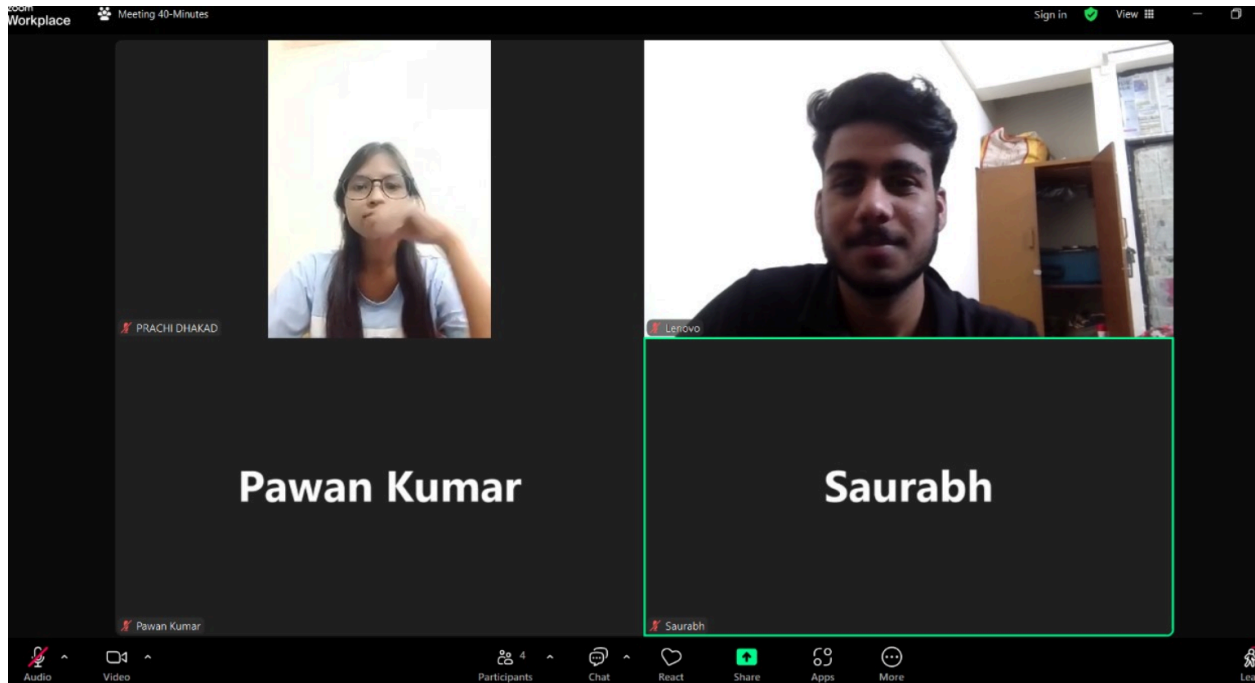
Official mail : invitation to meet:



Meeting Screenshot

A snapshot from our latest meeting, showing key discussion points and participant contributions.

A snapshot from our latest meeting, showing key discussion points and participant contributions.



Additional Information

References:

- Introduction to Linear Algebra by “Gilbert Strang”

Contact Information:

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