# Peer-to-Peer Chatting Application with Digital Signatures

## 1. Title Page

* **Project Title**: Peer-to-Peer Chatting Application with Digital Signatures
* **Course Name and Code**
* **Teachers Name**
* **Your Name**
* **Date of Submission**

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## 3. Introduction

Provide an overview of the project, its purpose, and its significance.

## 4. Objectives

Clearly state the objectives of the project. What do you aim to achieve by developing this application?

## 5. System Design

### 5.1 Architecture

Describe the overall architecture of the application. This includes the client-server model and how peers communicate with each other.

### 5.2 Use Case Diagram

Include a use case diagram to show the interactions between users and the system.

### 5.3 Sequence Diagrams

Provide sequence diagrams to illustrate the flow of messages and actions within the system.

## 6. Implementation

### 6.1 Technologies Used

List the programming languages, libraries, and tools used in the project.

### 6.2 Development Environment

Detail the development environment, including the hardware and software used.

### 6.3 Code Structure

Explain the structure of your codebase, including key modules and their functions.

### 6.4 Key Code Snippets and screen shot of the interface

Include important pieces of code with explanations to highlight key functionality.

Include screen shots of the interface.

## 7. Database Design

### 7.1 Schema

Provide the database schema used for user registration and message storage.

### 7.2 Tables and Relationships

Detail the tables and relationships within the database.

## 8. Digital Signature Integration

### 8.1 Signing Messages

Explain how messages are signed using digital signatures, including the cryptographic methods used.

### 8.2 Verifying Messages

Describe the process of verifying incoming messages and how this ensures authenticity and integrity.

8.3 Password Storage

Explain the hashing method you used to store passwords in the database.

## 9. Testing

### 9.1 Test Cases

List the test cases created to validate the functionality of the application.

### 9.2 Test Results

Present the results of the tests, including any issues found and how they were resolved.

## 10. User Guide

### 10.1 Installation Instructions

Provide step-by-step instructions for installing the application.

### 10.2 How to Use the Application

Guide users on how to use the application, including registration, sending messages, and verifying messages.

## 11. Conclusion

Summarize the achievements of the project, any challenges faced, and how they were overcome.

## 12. Future Work

Discuss future improvements you will make to this application.

## 13. References

List all the references and resources used in the development of the project.

## 14. Appendices (if any)

Include any additional material, such as detailed logs, additional diagrams, or extended code snippets.