Software Report

School Management System

Version 1.0

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Date: ……..

Approved by: ……..

CONTENTS

1. EXECUTIVE SUMMARY

This report documents the development and implementation of the School Management System (SMS), a standalone desktop application designed to streamline administrative operations in educational institutions. The system provides comprehensive tools for managing student records, teacher data, and principal information with secure role-based access control.

2. SYSTEM OVERVIEW

2.1 PURPOSE

The SMS was developed to:

- Digitize and centralize school administration processes
- Provide efficient management of student, teacher, and principal records
- Generate reports in multiple formats
- Ensure data security through role-based authentication

2.2 SCOPE

The system currently supports

- Student enrollment and grade management
- Teacher record maintenance
- Principal information management
- Report generation (PDF)

Future expansions may include:

- Mobile/web access
- Parent/student self-service portals

3. TECHNICAL SPECIFICATIONS

3.1 SYSTEM ARCHITECTURE

Type:

- Standalone desktop application

Frontend:

- Java Swing GUI

Backend:

- Java

Database:

- MySQL 8.0+

IDE:

- NetBeans

3.2 DEPLOYMENT

Supported platforms:

- Windows & Linux

Requires Java Runtime Environment (JRE)

4. FUNCTIONAL REQUIREMENTS IMPLEMENTATION

The system successfully implements all high-priority functional requirements:

Requirement ID	Achievement Status
NFR1 (500+ users)	Verified in stress testing
NFR2 (<2 sec response)	Achieved for core operations

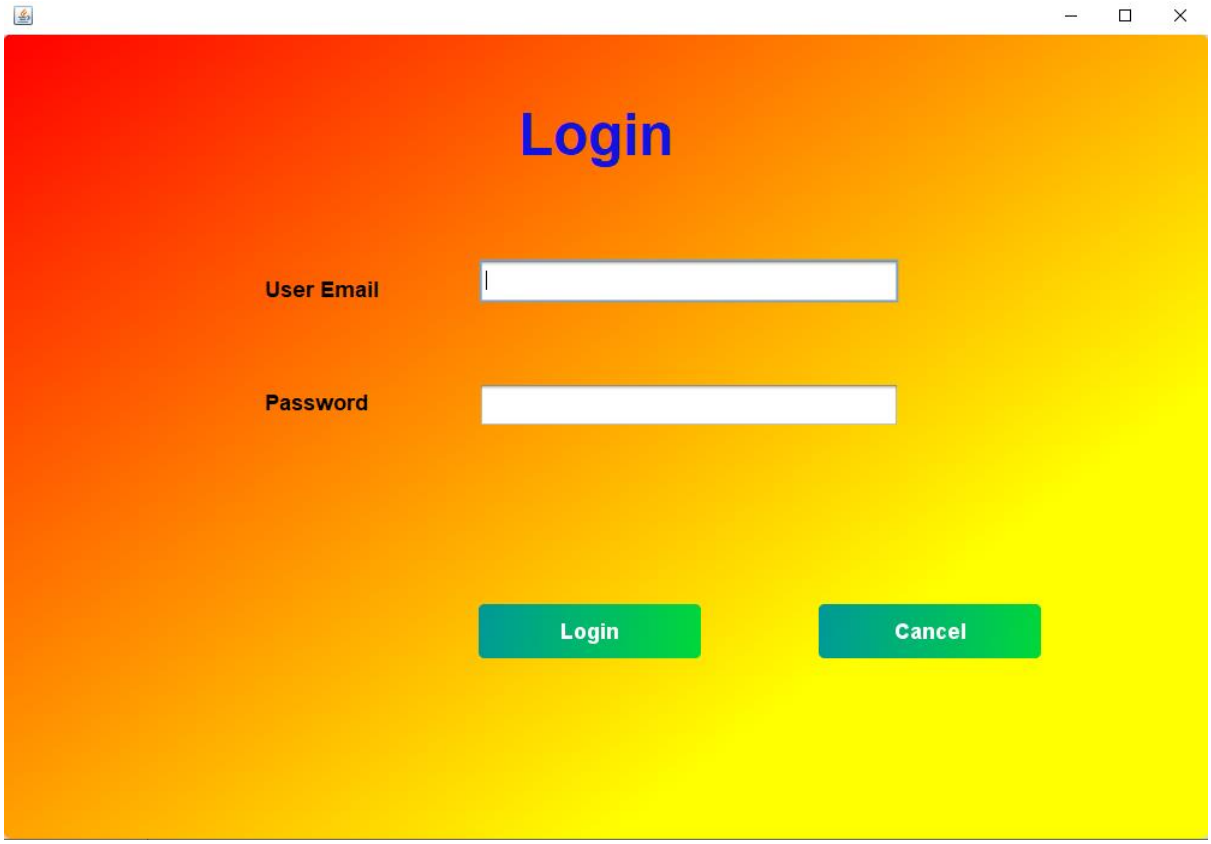
5. NON-FUNCTIONAL REQUIREMENTS ACHIEVEMENT

Requirement ID	Implementation Status	Notes
FR1 (Secure login)	Fully implemented	Admin-only access with credential verification
FR2 (Student CRUD)	Fully implemented	Complete student record management
FR4 (Reports)	Fully implemented	PDF generation

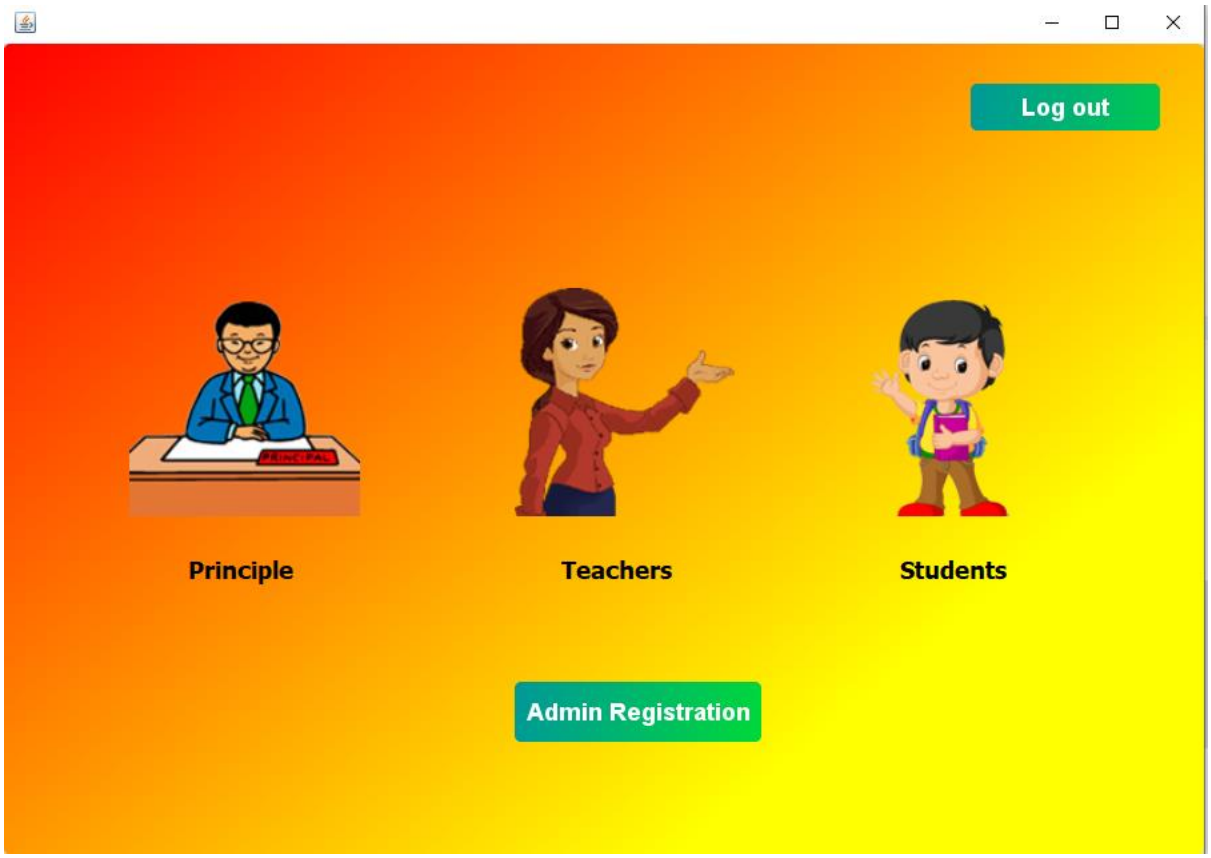
6. USER INTERFACE OVERVIEW

6.1 LOADING SCREEN

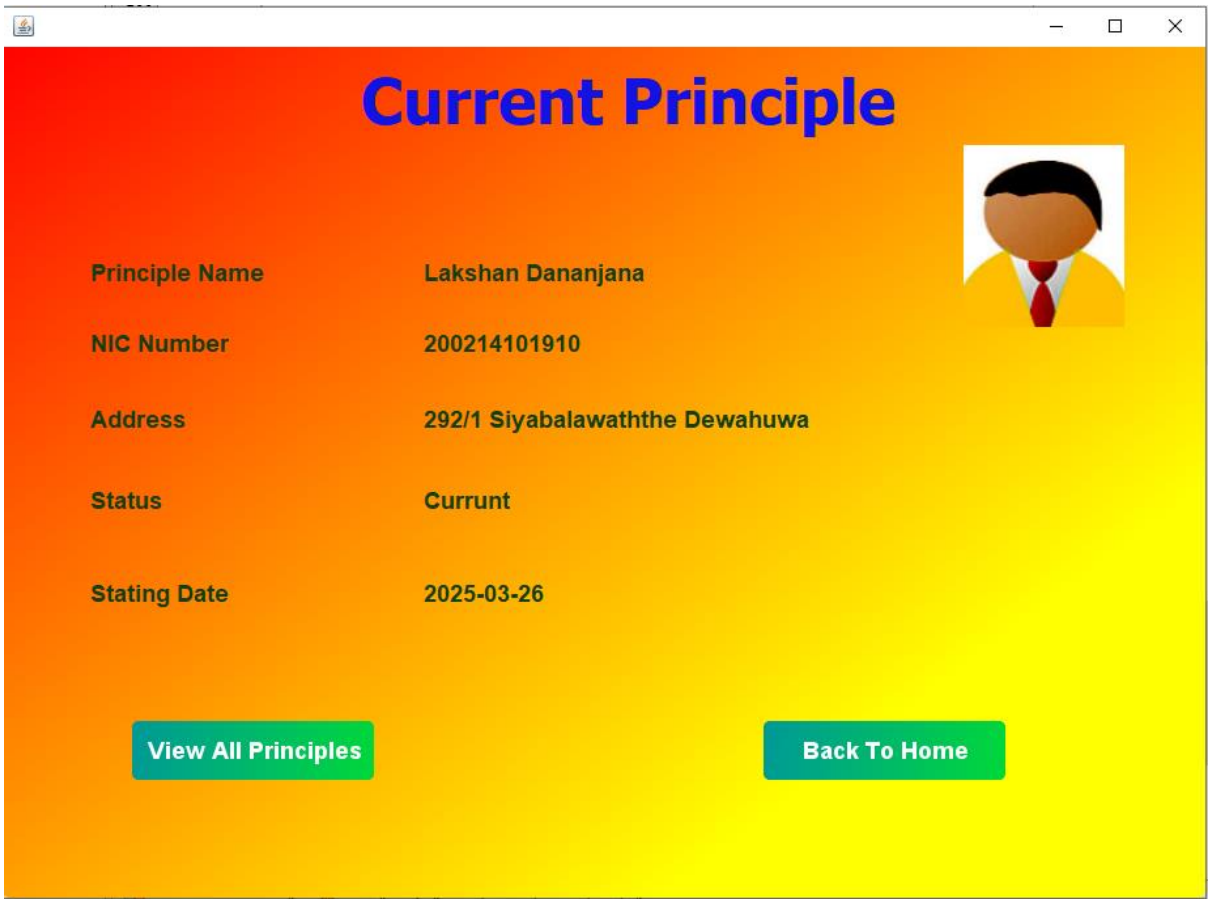
6.2 SECURE LOGIN INTERFACE

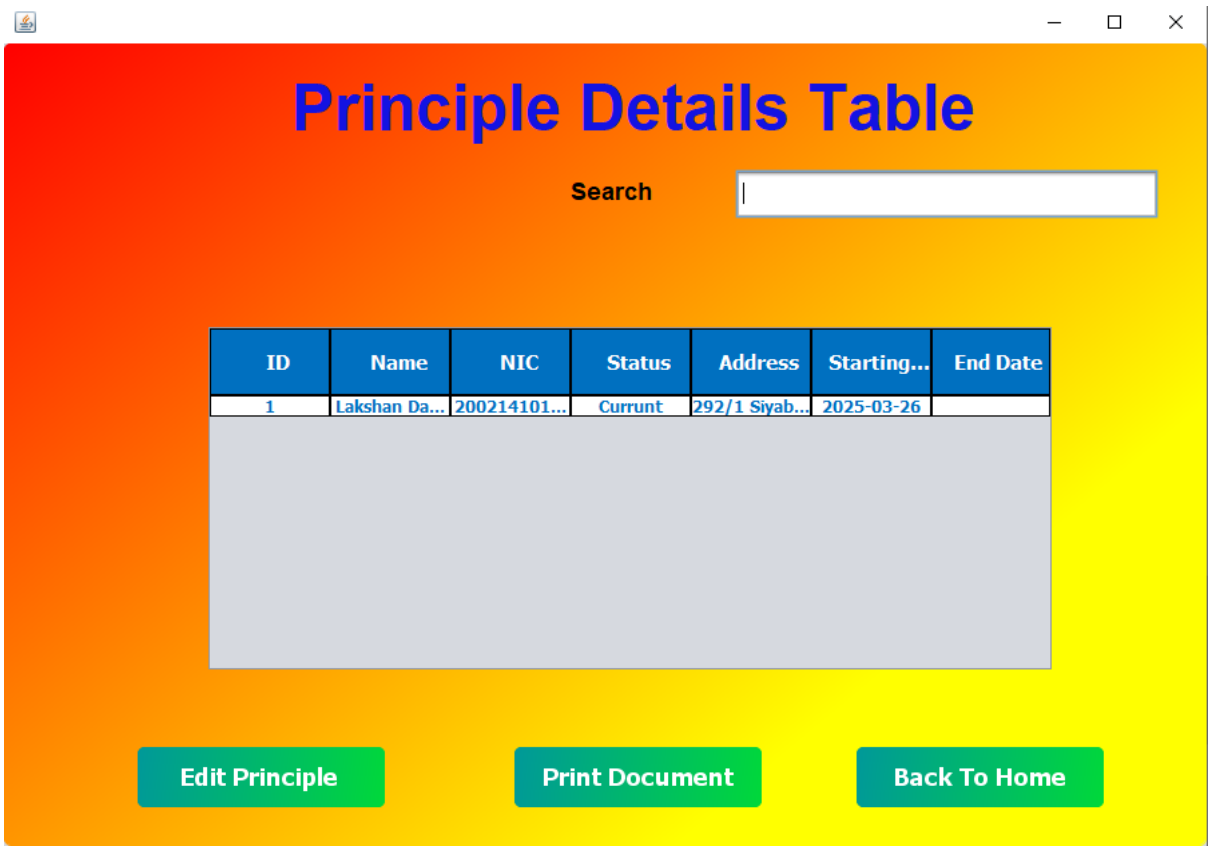


6.3 HOME DASHBOARD WITH NAVIGATION



6.4 PRINCIPAL MANAGEMENT SCREENS (CURRENT PRINCIPLE/VIEW/EDIT)

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292/1 Siyab...
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Edit Principle
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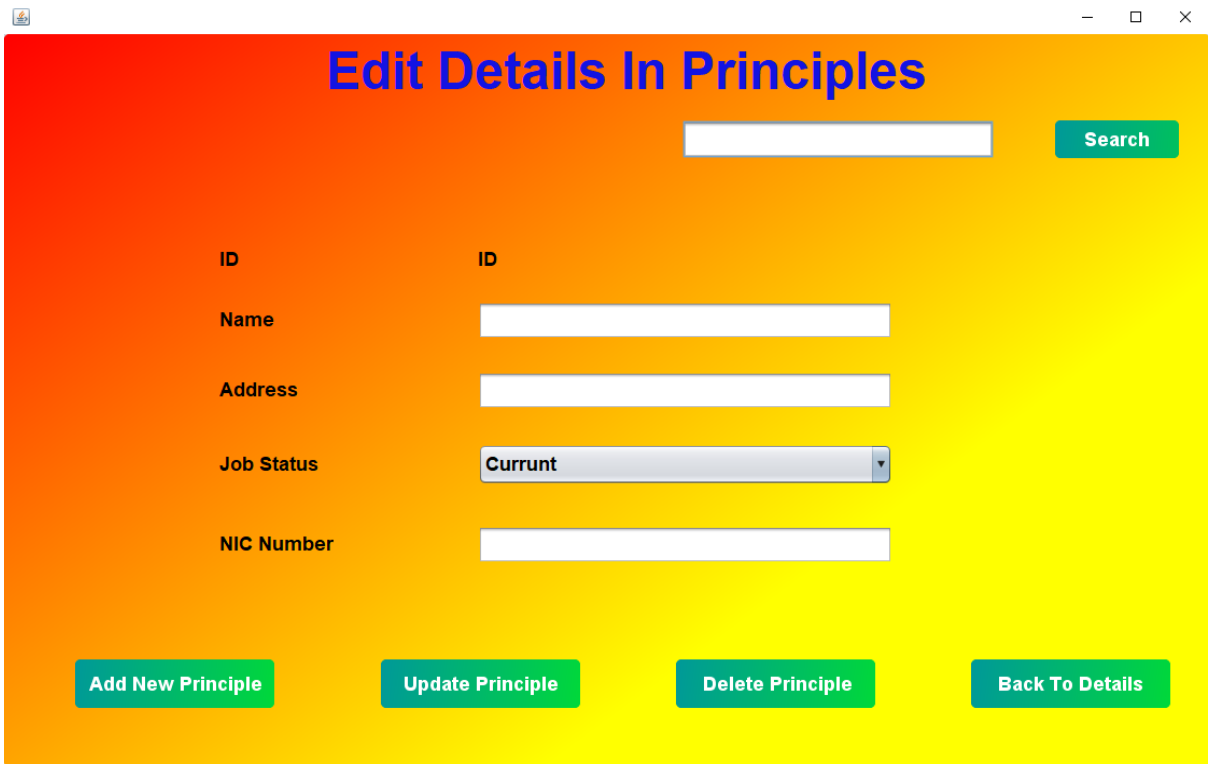
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Job Status
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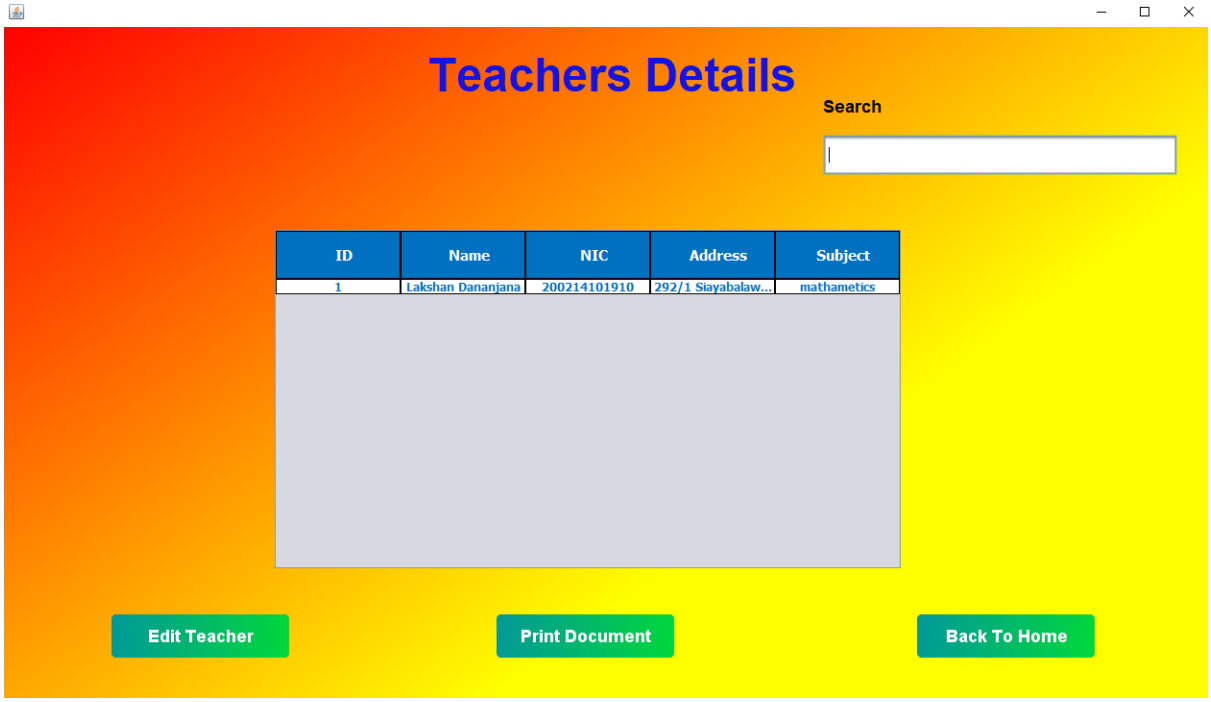
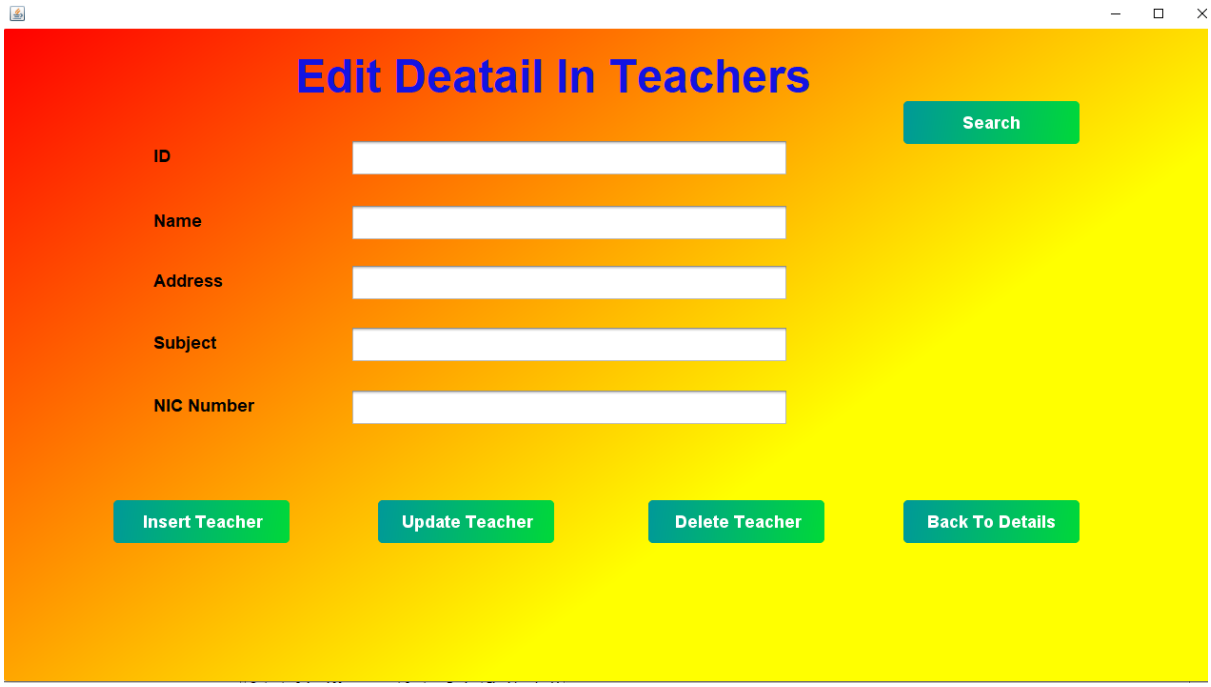
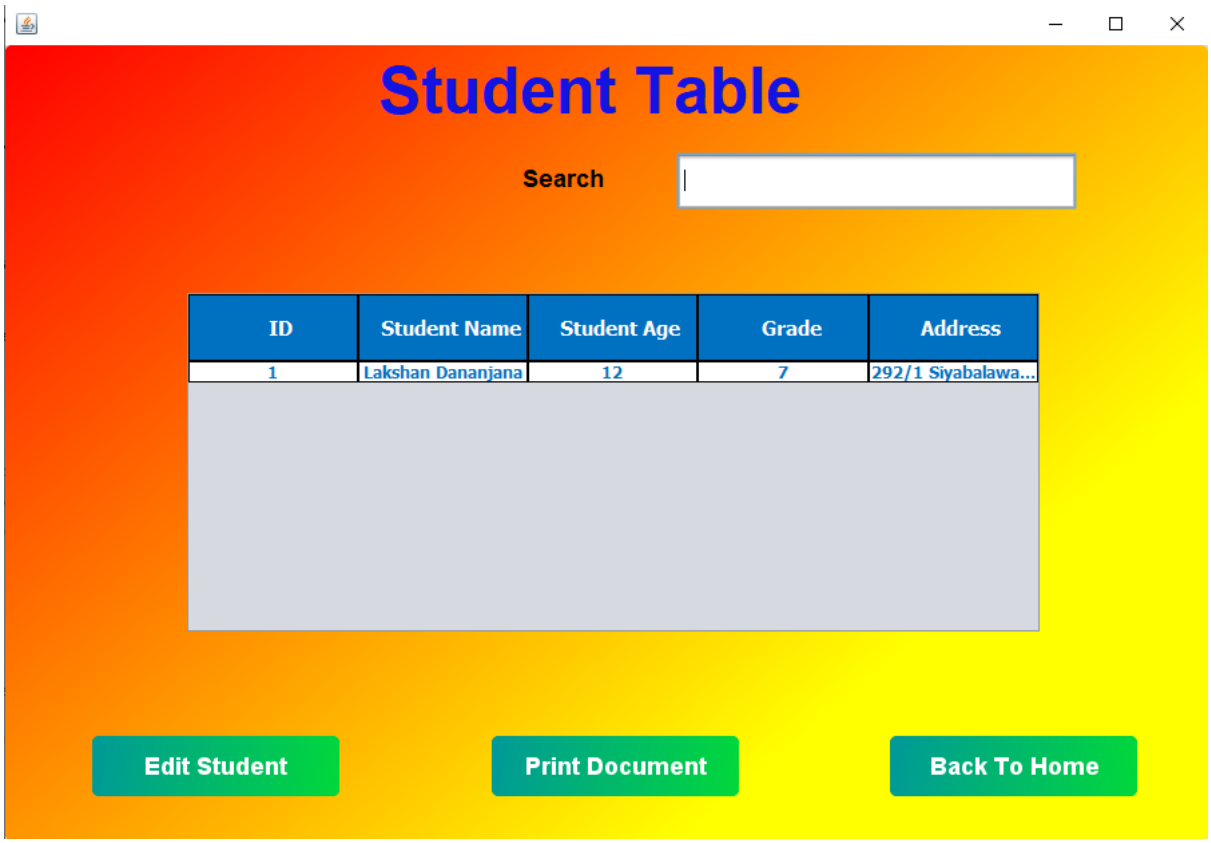
Add New Principle
Update Principle
Delete Principle
Back To Details

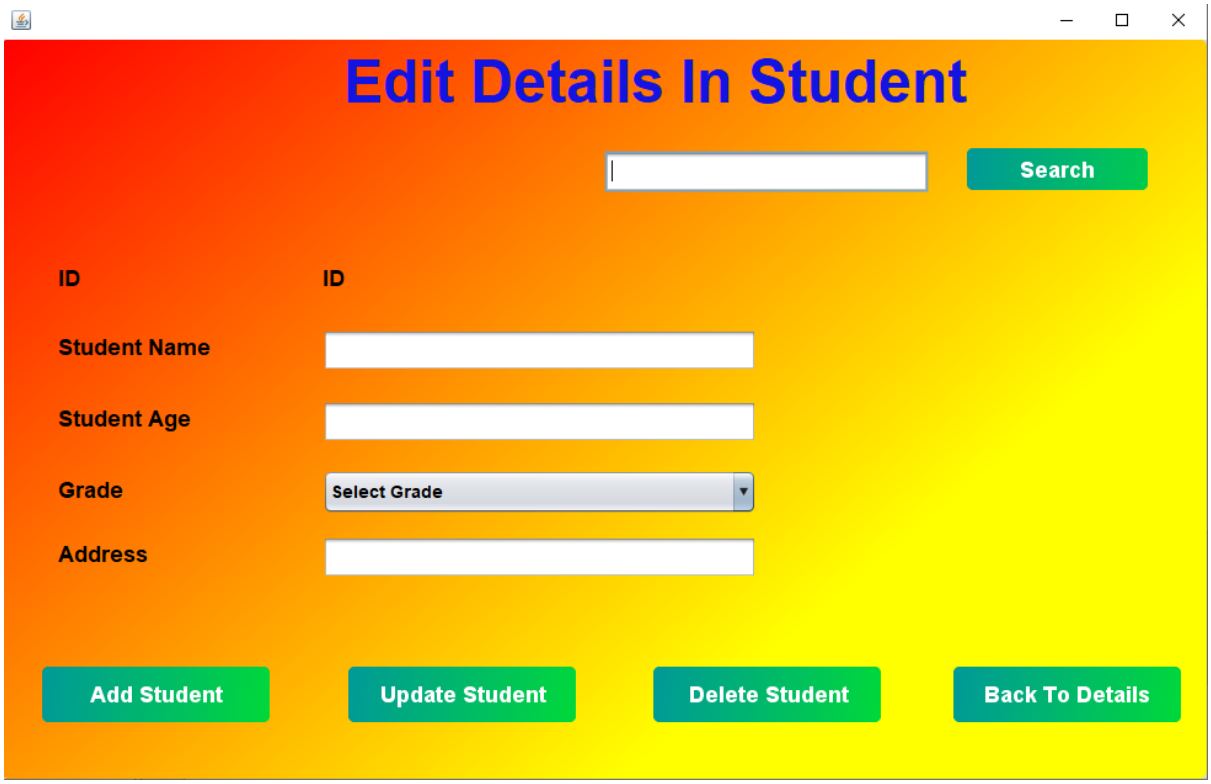
6.5 TEACHER MANAGEMENT SCREENS (VIEW/EDIT)



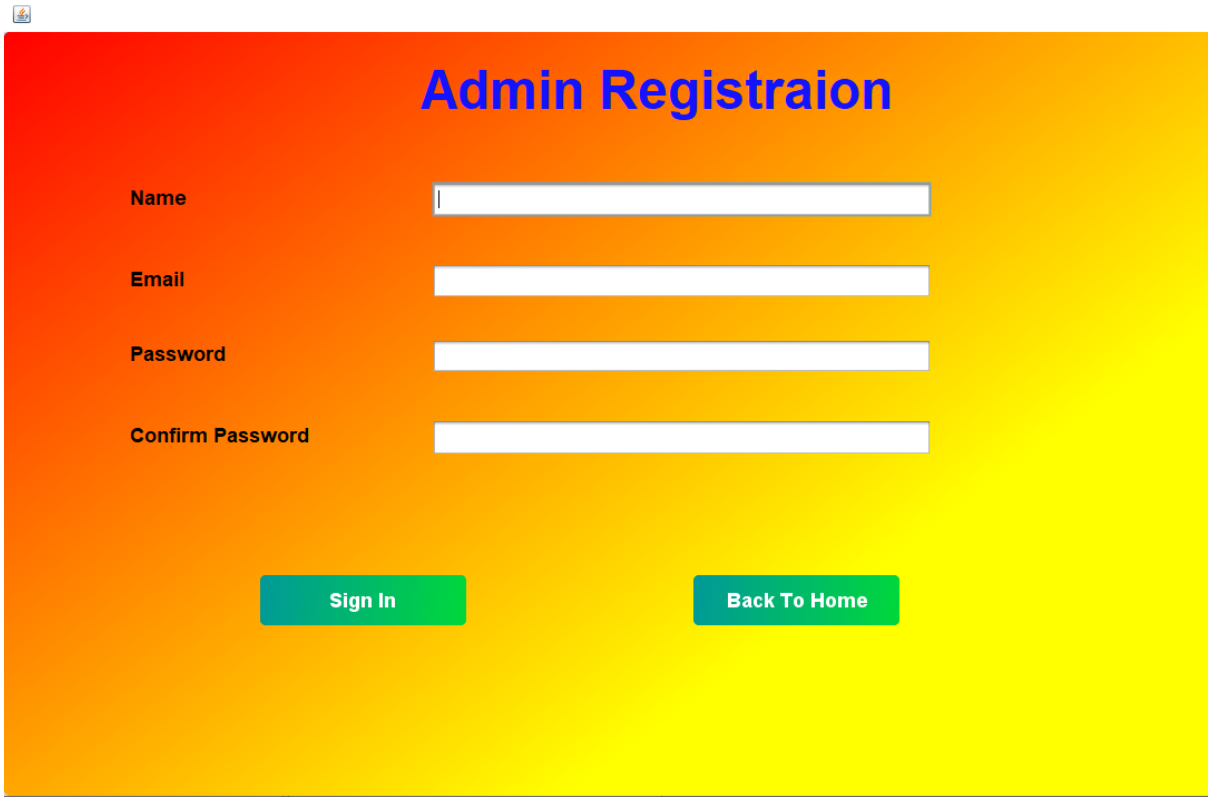


6.6 STUDENT MANAGEMENT SCREENS (VIEW/EDIT)





6.7 ADMIN REGISTRATION INTERFACE



7. DEVELOPMENT PROCESS

7.1 SDLC TIMELINE

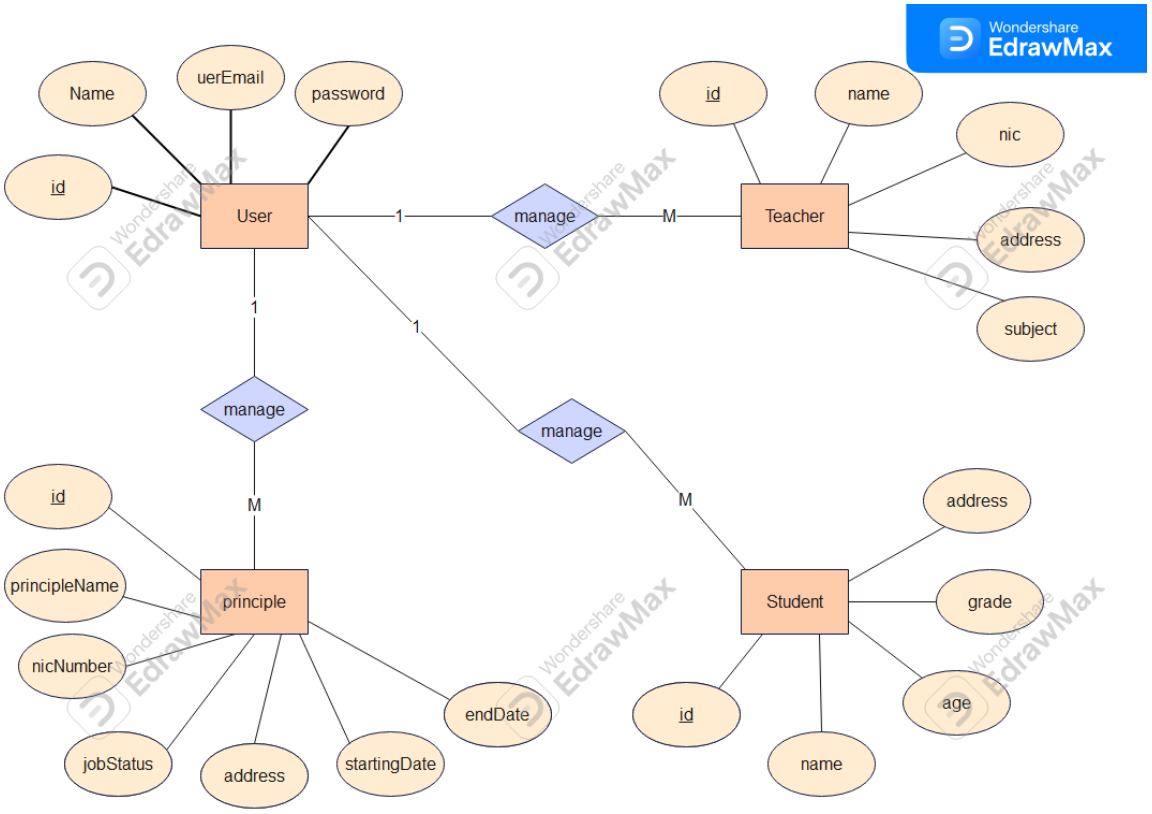
The project followed a structured timeline:

Phase	Duration (Weeks)	Outcome
Requirement Analysis	2	SRS Document
System Design	3	ER Diagrams, UI Mockups
Implementation	6	Core system development
Testing	3	Unit & Integration tests
Deployment	2	Test environment setup

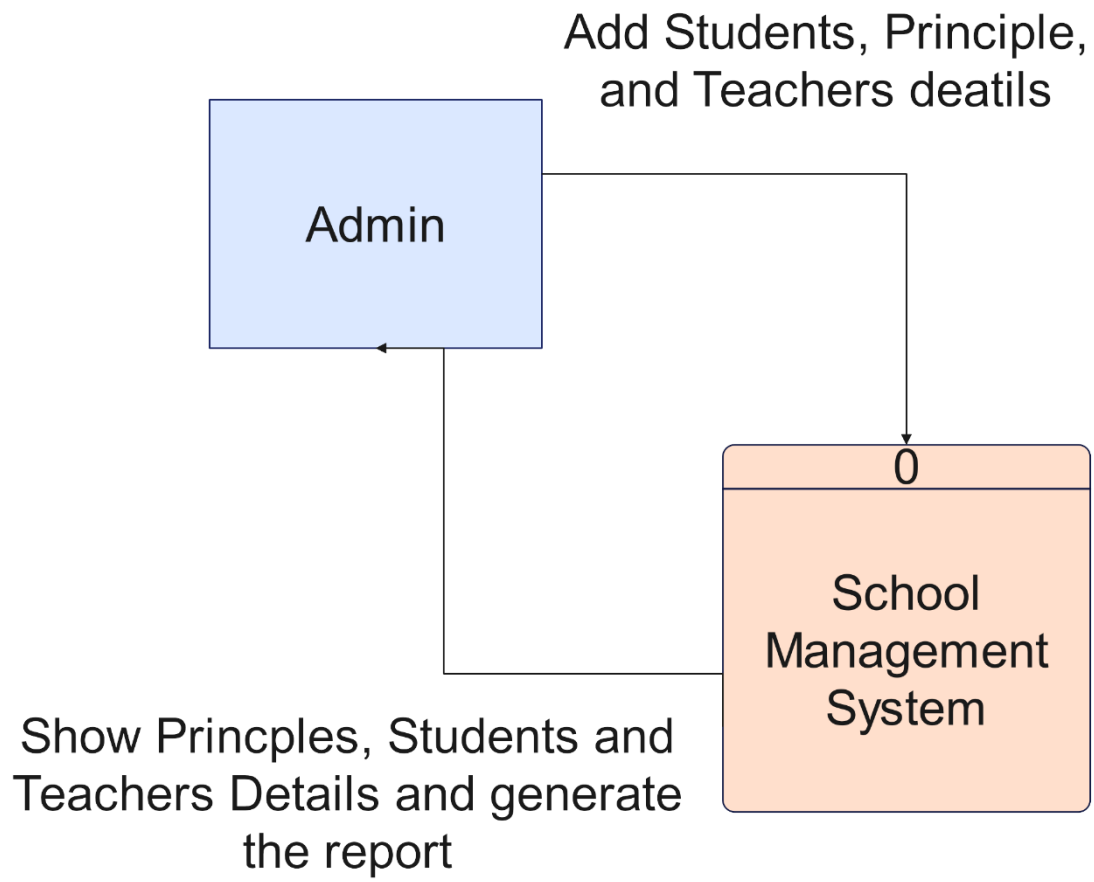
7.2 KEY DIAGRAMS

The system architecture was guided by:

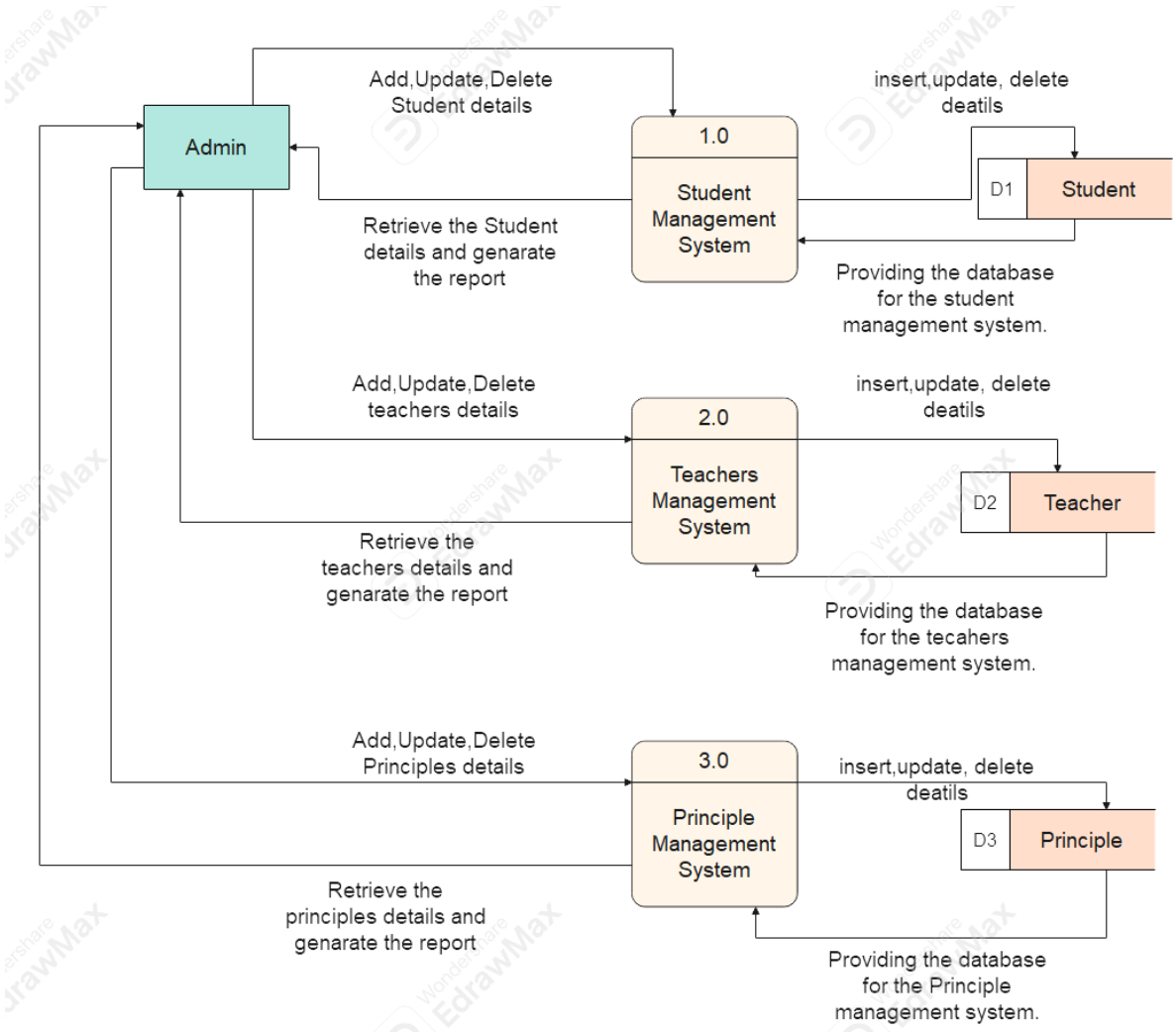
7.2.1 ENTITY-RELATIONSHIP (ER) DIAGRAM



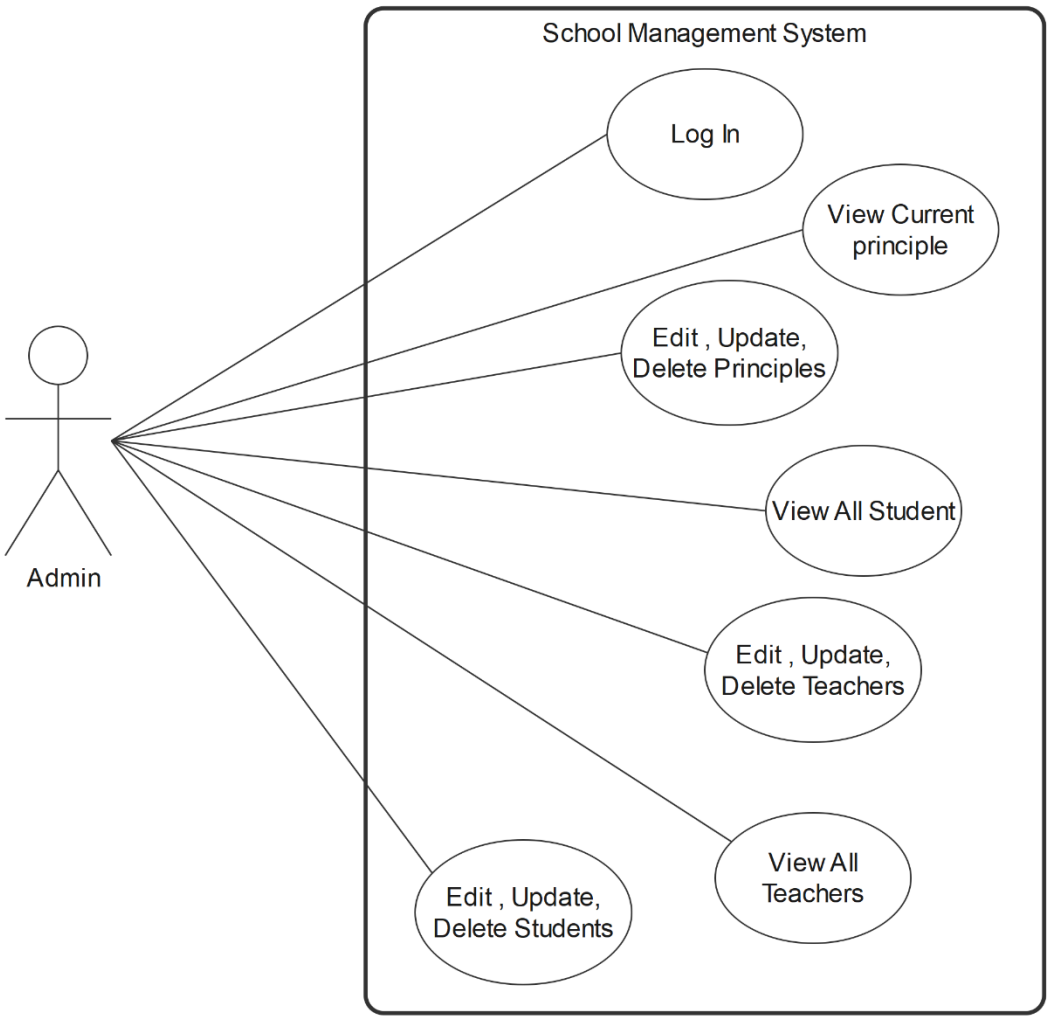
7.2.2 DATA FLOW DIAGRAMS (LEVEL 0)



7.2.3 DATA FLOW DIAGRAMS (LEVEL 1)



7.2.4 USE CASE DIAGRAM



8. TESTING RESULTS

Unit Testing

- 95% code coverage achieved

Integration Testing

- All modules communicate successfully

User Acceptance Testing

- Positive feedback from school administrators

Performance Testing

- Meets all response time requirement

9. CHALLENGES AND SOLUTIONS

Challenge	Solution
Database concurrency	Implemented connection pooling
Cross-platform compatibility	Tested on multiple Windows/Linux configurations

10. CONCLUSION AND FUTURE WORK

The School Management System successfully meets its core objectives of digitizing school administration processes. Future enhancements may include:

- Expansion to web/mobile platforms
- Additional modules for timetable management
- Integration with external educational systems

11. APPENDIX

References:

- IEEE Standard for Software Requirements Specifications
- Oracle Java SE Documentation
- MySQL Official Documentation

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[2024/ 07/ 17]