Time Track College Application Time Track College Application

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Article Info	Abstract:
Article History: *Published:19 March 2026* *Publication Issue:* *Volume 3, Issue 3* *March-2026* *Page Number:* *365-370* *Corresponding Author:* *Pranali Chandrakant Kharat*	Timetable management in colleges is a complex and time-consuming task that involves scheduling classes, faculty, and resources while avoiding conflicts. Traditional manual methods are inefficient, error-prone, and difficult to modify. To address these challenges, this paper presents the Time Track College Application, an intelligent timetable management system designed to automate and optimize academic scheduling. The proposed system uses a Genetic Algorithm to generate conflict-free and optimized timetables. *Keywords:* Timetable Management, Android Application, College Automation, Scheduling System, Mobile Computing

1. INTRODUCTION

Timetable management is a crucial activity in colleges as it involves organizing classes, faculty schedules, and classroom usage efficiently. Manual timetable preparation is time-consuming, error-prone, and difficult to update when changes occur.

The **Time Track College Android Application** is developed to automate and simplify timetable management. It provides easy access to schedules for students, teachers, and administrators through a user-friendly mobile interface. The system reduces conflicts, saves time, and improves overall academic coordination by offering an efficient and reliable digital solution.

2. METHODOLOGY

- Study the existing manual and digital timetable management systems to identify limitations
- Collect requirements from students, faculty, and administrators
- Design a three-tier system architecture consisting of presentation, application, and database layers
- Develop a user-friendly interface for timetable viewing and management
- Implement timetable generation logic using Genetic Algorithm to handle constraints like faculty availability, classrooms, and time slots
- Validate generated timetables to avoid conflicts and overlapping schedules
- Store timetable, user, and resource data securely in the database
- Provide real-time updates and notifications for timetable changes
- Test the system for accuracy, performance, and usability
- Deploy the application for college use and collect feedback for improvements

A. Functional Modules:

1. User Authentication Module –

   Handles user registration and login for students, faculty, and administrators securely.

2. Timetable Management Module –

   Generates, views, and updates class timetables while avoiding scheduling conflicts.

3. Faculty Management Module -
   Manages faculty details, subject allocation, and availability.

4. Student Management Module -
   Stores student information and provides access to personalized timetables.

5. Notification & Reminder Module -
   Sends alerts for class schedules, changes, and important updates.

6. Database Management Module -
   Stores and retrieves all timetable, user, and resource data securely.

B. Testing:

Verify that the Time Track College Android application correctly generates, displays, updates, and secures timetables without errors or conflicts.
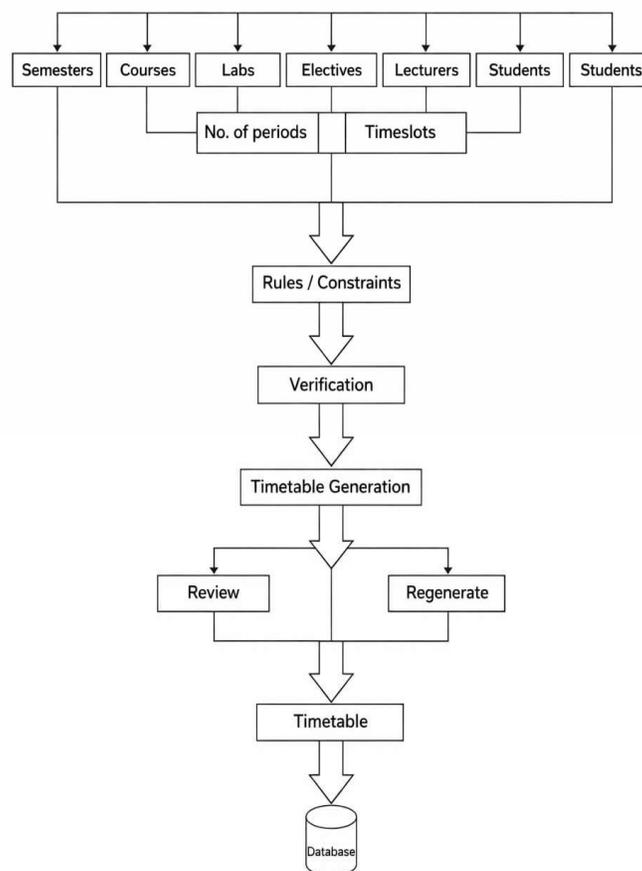
Fig 1. System Architecture of Time Track College App

3. LITERATURE SURVEY

Timetable management is an important task in educational institutions, and many studies show that automated scheduling systems reduce errors and save time. Traditional manual methods are inefficient and difficult to manage.

Existing tools provide basic scheduling features but lack academic-specific customization. Recent research highlights the use of intelligent algorithms to generate conflict-free timetables. Hence, there is a need for a simple, mobile-based timetable management system like the Time Track College application.

4. RESULT AND DISCUSSION

The TimeTrack College Android application successfully generated accurate, conflict-free timetables and provided real-time access to schedules for students and faculty. The system reduced manual effort, minimized scheduling errors, and improved overall efficiency.

The results show that automating timetable management improves resource utilization and user convenience. The Android-based interface made the system easy to use, while real-time updates enhanced coordination. Compared to manual methods, the application proved to be faster, more reliable, and scalable for future expansion.
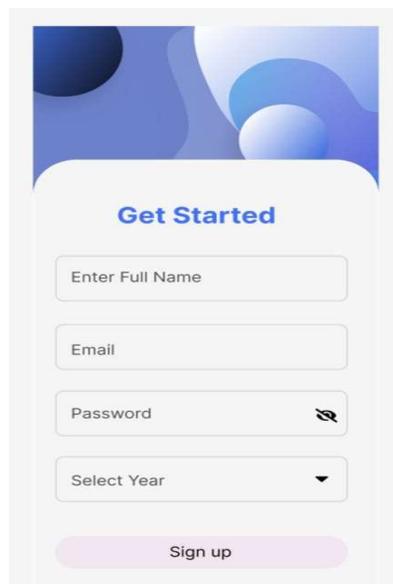
Fig 2. Lgin Page

Student Login / Registration Screen

Information :

This screen is used for student registration and login.

Students enter:

Full Name

Email ID

Password

Academic Year

After successful signup, students can log in using their credentials.

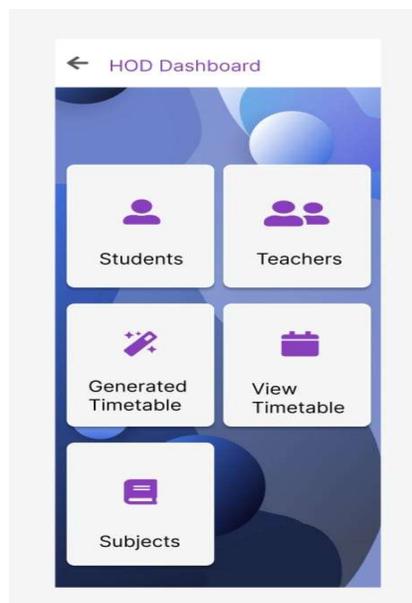Secure authentication ensures data privacy and authorized access.

This module allows students to :

View their timetable

Track academic activities

Access time-related information

It provides a simple and user-friendly interface.

Fig 3. Home Page

HOD Dashboard Information :

This screen represents the Head of Department (HOD) Dashboard.

HOD can manage students, teachers, subjects, and timetables from one place.

Options available :

Students : View and manage student details.

Teachers : View and manage teacher information.

Generate Timetable : Create timetable automatically based on subjects and availability.

View Timetable : Check generated timetables.

Subjects : Add, update, or remove subjects.

This dashboard helps the HOD to monitor and control academic scheduling efficiently.

Fig 4. Final Page

Final Created Timetable Information :

This screen displays the final generated timetable.

Timetable is arranged day-wise and time-slot-wise.

Each slot contains :

Subject Name

Teacher Name

Includes lunch break and short break clearly marked.

Timetable helps students and teachers to:

Know class schedule easily

Manage time effectively.

5. CONCLUSION AND FUTURE WORK

Conclusion

The Time Track College Android Application provides an effective solution to the challenges of traditional timetable management systems. By automating the scheduling process, the system significantly reduces manual effort, human errors, and time consumption. It ensures efficient utilization of academic resources such as faculty, classrooms, and time slots while maintaining conflict-free schedules. The Android-based interface improves accessibility and convenience for students, teachers, and administrators by providing real-time timetable updates. Overall, the application enhances institutional productivity, improves coordination, and supports data-driven academic planning.

Future Work

In future, the application can be further enhanced by integrating Artificial Intelligence and Machine Learning algorithms to generate more optimized and personalized timetables. Additional modules such as attendance management, examination scheduling, performance analytics, and push notifications can be incorporated. Cloud integration can improve data security and scalability, while integration with Learning Management Systems (LMS) will create a complete academic automation platform. These enhancements will make the system more intelligent, flexible, and suitable for large-scale educational institutions.

ACKNOWLEDGMENT

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