TIME TABLE MANAGEMENT SYSTEM

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ABSTRACT

Time Table Management system allows users to create, modify, and maintain schedules for courses, classrooms, instructors, and students. By automating the process of creating and managing schedules, this system saves time and reduces errors. The key features of a timetable management system include schedule creation, schedule modification, conflict resolution, schedule optimization, and reporting.

Keywords: Scheduling, Education, Automation, Conflict Resolution, Optimization, And Reporting.

I.   INTRODUCTION

Timetabling concerns all activities with regard to producing a schedule that must be subjective to different constraints. Timetable can be defined as the optimization of given activities, actions or events to a set of objects in space-time matrix to satisfy a set of desirable constraints. A key factor in running an educational centre or basically an academic environment is the need for a well-planned, well-throughout and clash-free timetable. Back in the days when technology was not in wide use, (lecture) timetables were manually created by the academic institution. Every school year, tertiary institutions are faced with the tedious task of drawing up academic timetables that satisfies the various courses and the respective examination being offered by the different departments.

II.   METHODOLOGY

The methodology for developing Time Table Management System involves several stages, including:

Requirement Analysis: In this step, the requirements of the system are identified through discussions with stakeholders, including faculty members, staff, and students. The purpose of this step is to understand the objectives of the system, the user needs, and the constraints involved.

Planning:

This involves defining the scope of the project, setting goals and objectives, identifying the target audience, and creating a project plan.

Design: Once the requirements are gathered, the system's design is created, including the data structures, algorithms, and user interfaces. In this step, the database schema, user interface design, and software architecture are defined.

Implementation: In this step, the system is developed using the design specifications. The software components are programmed, and the database is implemented.

Testing: The system is tested to ensure that it meets the specified requirements. Testing includes functional testing, integration testing, and acceptance testing.

Deployment: The system is deployed in the production environment, and users are trained to use it. Any necessary changes to the system are made during this step.
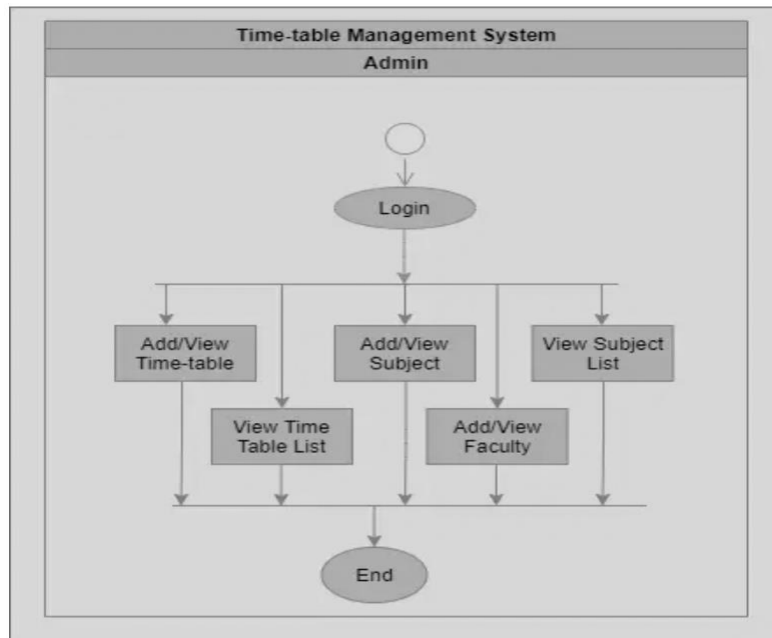
Maintenance: After the system is deployed, it must be maintained and updated as necessary. This includes bug fixes, updates to the database schema, and modifications to the user interface.

By following these steps, the timetable management system can be developed in a structured and efficient manner.
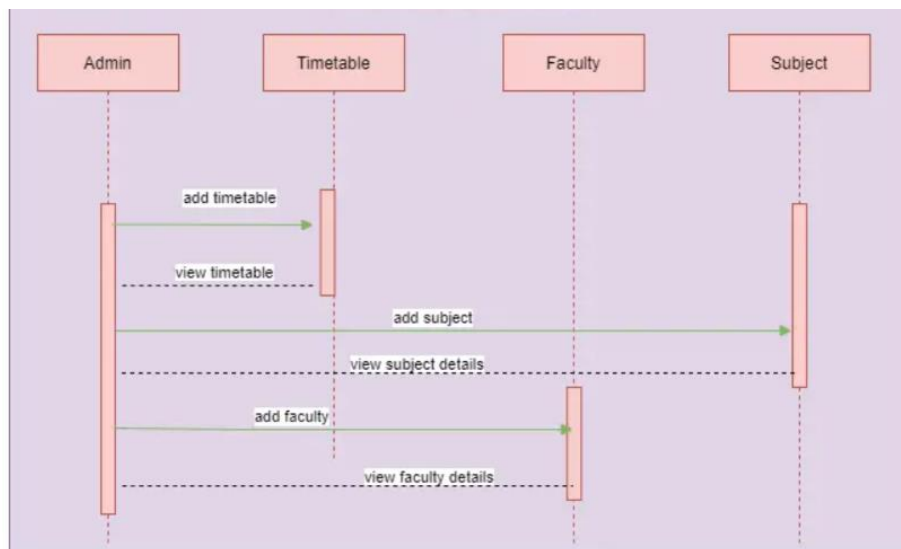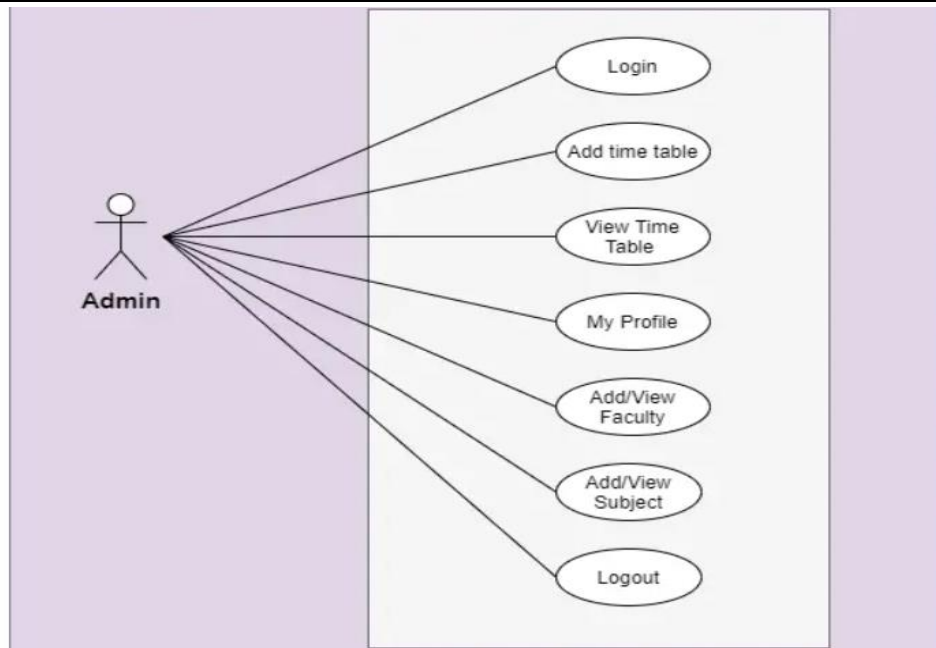
III.   MODELING AND ANALYSIS
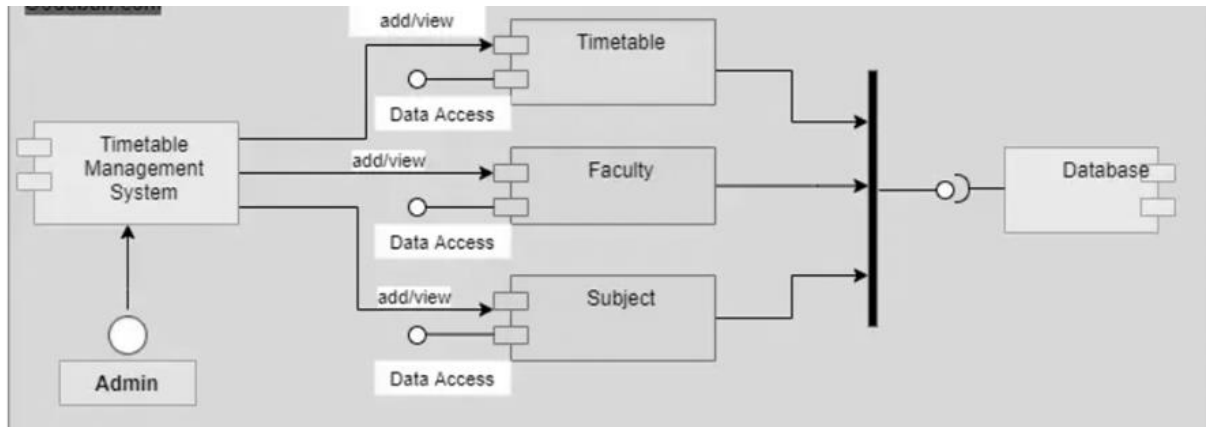
Figure 1: Use Case Diagram

Figure 2: Activity Diagram.

Figure 3: Sequence Diagram.

Figure 4: Use Diagram.

IV. RESULTS AND DISCUSSION

1. Time-saving: A time table generator can save significant time and effort for administrators or educators by automating the process of creating schedules. This can free up valuable resources and allow them to focus on other important tasks.

2. Increased efficiency: By automating the scheduling process, a time table generator can reduce errors, minimize conflicts, and optimize the allocation of resources. This can result in more efficient use of time and resources, ultimately leading to better outcomes.

Overall, the results of creating a time table generator can positively impact educational institutions' efficiency, quality, and effectiveness. By automating the scheduling process and optimizing the allocation of resources, a time table generator can improve the learning experience for students, reduce workload for educators, and improve the overall management of academic institutions.

V. CONCLUSION

In conclusion, A timetable management system can provide greater flexibility in terms of course offerings, scheduling options, and rescheduling of classes, making it easier for educators to adapt to changing circumstances. It can also reduce labor costs and minimize the risk of errors, resulting in cost savings for educational institutions.

ACKNOWLEDGEMENTS

VI. REFERENCES

[1]   A Review of Time Table Management Systems for Higher Education Institutions" by A. R. Ismail, N. F. M. Ali, and N. F. Abas. This article provides a comprehensive review of time table management systems for higher education institutions. It discusses the features, advantages, and limitations of various systems and proposes recommendations for future research.

[2] J. Lee, S.-P. Ma, L. F. Lai, N. L. Hsueh, and Y.-Y. Fanjiang, "University timetabling through conceptual modeling," Int. J. Intell. Syst., vol. 20, no. 11, pp. 1137–1160, Nov. 2005.

[3] Design and Implementation of an Automated Time Table Management System for a Higher Institution" by S.A. Adigun and O.O. Adigun. This article presents an automated time table management system that was designed and implemented for a higher.

[4] N. Pillay, "A survey of school timetabling research," Ann. Oper. Res., vol. 218, no. 1, pp. 261–293, Jul. 2014.

[5] D. Datta, K. Deb, and C. M. Fonseca, "Solving class timetabling problem of IIT Kanpur using multi-objective evolutionary algorithm," KanGAL Rep., vol. 2006006, pp. 1–10, 2006.

[6] A. Colorni, M. Dorigo, and V. Maniezzo, " A genetic algorithm to solve the timetable problem," Politec. Milano Milan Italy TR, pp. 90–60, 1992.

[7] S. Hooshmand, M. Behshameh, and O. Hamidi, "A Tabu Search Algorithm With Efficient Diversification Strategy for High School Timetabling Problem," Int. J. Comput. Sci. Inf. Technol., vol. 5, no. 4, pp. 21–34, Aug. 2013.