

Smart Timetable Generator

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Abstract: *The Smart Timetable Generator research work presents an innovative solution for creating efficient timetables, particularly suitable for educational institutions like colleges. Leveraging the versatile Flutter framework, Dart Language and Firebase for website development, we've designed an easy-to-use interface that empowers users to input their scheduling requirements effortlessly. The real magic happens behind the scenes, where we employ genetic algorithms to generate optimized schedules that maximize resource utilization while minimizing conflicts. The N-Queen algorithm, genetic algorithm, and resource scheduling work like problem-solving wizards, iteratively refining schedules until they meet all constraints and preferences. What sets this solution apart is its user-friendliness; anyone can interact with the app, visualize the generated timetables, and make real-time adjustments. The website allows real-time adjustments and synchronization across multiple devices, streamlining timetable creation and improving resource allocation. In summary, the Smart Timetable Generator combines Flutter's simplicity with genetic algorithms' intelligence to offer a comprehensive solution adaptable to various scheduling needs. Ultimately, this research work streamlines the often-troublesome task of timetable creation, resulting in improved resource allocation and reduced manual effort, all thanks to the power of genetic algorithms and the simplicity of the Flutter framework*

Keywords: Genetic Algorithm, Resource Scheduling, N-Queen, Timetable Automation, Cross Platform Based Timetable, Generation, Flutter Framework.

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