

ABSTRACT

This report provides an in-depth exploration of the Software Development Life Cycle (SDLC) as applied to the creation of a car rental website, emphasizing its systematic and iterative approach to delivering a high-quality product tailored to the needs of both users and businesses. The SDLC is divided into distinct phases, starting with Requirement Analysis, where the business and user needs are identified, focusing on essential features like real-time vehicle availability, online booking, secure payment gateways, customer account management, and mobile responsiveness. The System Design phase translates these requirements into a blueprint, including architecture diagrams, wireframes, user flow charts, and database schemas, ensuring that the design aligns with functional and non-functional requirements. The Implementation phase involves building the website using modern technologies such as responsive web frameworks and scalable backend systems, with a focus on usability, reliability, and security. Comprehensive Testing follows, involving unit, integration, and user acceptance testing to identify and resolve defects, ensuring that the website performs as expected under various conditions. The Deployment phase involves launching the website on a cloud-based, scalable hosting platform with optimized backend infrastructure, ensuring minimal downtime and a seamless user experience. Finally, the Maintenance and Updates phase ensures continuous improvement through monitoring, troubleshooting, and adding new features based on user feedback and evolving technological trends. This report demonstrates how the SDLC approach minimizes risks, enhances productivity, and ensures the delivery of a reliable, secure, and user-friendly car rental website, addressing challenges such as data security, changing requirements, and scalability.

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