#### **Software Development Life Cycle (SDLC) for Interactive Quiz Application**

#### **Introduction**

The Software Development Life Cycle (SDLC) is a systematic framework utilized to guide the efficient and effective development of software applications. It comprises a sequence of well-defined phases, including planning, analysis, design, implementation, testing, deployment, and maintenance. In the context of the Interactive Quiz Application, adherence to SDLC principles facilitates a structured and methodical approach to development, ensuring the delivery of a high-quality, user-centric product within the projected timeframe. Moreover, the SDLC provides a comprehensive roadmap for monitoring progress, mitigating risks, and verifying that the final application aligns with the specified functional and performance requirements..

#### **Problem Statement**

In today’s digital-first environment, delivering engaging and accessible educational experiences poses significant challenges. Traditional assessment methods, such as paper-based quizzes or static online forms, often lack interactivity, real-time feedback, and scalability. Additionally, the absence of a structured development approach can result in poor user experience, limited functionality, and reduced learner engagement. The Interactive Quiz Application addresses these issues by leveraging the Software Development Life Cycle (SDLC) methodology to develop a dynamic, user-friendly, and adaptable platform. This solution aims to enhance learning outcomes, promote active participation, and ensure a scalable, high-quality application aligned with modern educational needs.