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(57) Abstract :

The present invention discloses a cloud-based system for automated software test case generation. The system comprises a Requirement Analysis Module (101), AI-driven Test Generation Engine (102), Machine Learning Optimizer (103), Cloud Orchestration Layer (104), Collaboration Dashboard (105), and Integration API (106). Requirements are ingested, parsed, and converted into executable test cases, which are optimized using machine learning and managed within a scalable cloud environment. The invention ensures reduced manual effort, improved test coverage, enhanced collaboration, and seamless integration with CI/CD pipelines.

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