Analysis of Continuous Integration / Continuous Delivery (CI/CD) Implementation on *Website*-Based Information System Development Using GitHub Actions

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ABSTRACT

Website application development often faces challenges in the time-consuming and error-prone deployment process. Continuous Integration/Continuous Delivery (CI/CD) with GitHub Actions offers a solution to automate this process. This study aims to test the efficiency and effectiveness of CI/CD compared to manual methods, especially in terms of time and number of steps required. Testing was carried out using two approaches, namely the manual method using cPanel and the CI/CD method utilizing GitHub Actions. Both methods were compared based on the number of steps and the total time required for deployment and file updates. The results show that the CI/CD method is much more efficient, requiring only 63 steps compared to 294 steps in the manual method, reducing by up to 231 steps. In terms of time, CI/CD takes 32 minutes 32 seconds, 3 minutes 55 seconds faster than the manual method which takes 36 minutes 27 seconds. In addition to efficiency, CI/CD also improves process consistency and reduces the risk of manual errors.

Keywords: *Website Development*, CI/CD, GitHub Actions