ABSTRACT

ANALYSIS OF JENKINS GITHUB PERFORMANCE IN THE CONTINUOUS INTEGRATION AND CONTINUOUS DEPLOYMENT PROCESS IN WEBSITE DEVELOPMENT

Traditional website development by separating the build, test, and deployment processes between the developer and operations teams, often takes longer. To address this, Continuous Integration (CI) and Continuous Deployment (CD) implementations are required. This study analyzes the performance of CI/CD tools, namely Jenkins and GitHub, with a focus on execution time, constraints, and costs. DevOps (Developer and Operation) methods are applied to automate the website development process. The results show that Jenkins execution time is longer (8.12–10.59 minutes) than GitHub (4.31–5 minutes), GitHub is superior in time efficiency. Jenkins' success rate is 50%, lower than GitHub's 100% of 10 CI/CD processes, making GitHub the better choice in terms of reliability. In terms of cost, these two tools were used for free in this study. Jenkins does not require any additional costs as it runs on a local server, whereas GitHub utilizes the Pro account of the Student Developer Pack program. As such, Jenkins is better suited for developers who have adequate on-premises server capacity, while GitHub is more ideal for those who prioritize execution time and high success rates.

Keywords: *Continuous Integration, Continuous Deployment, Jenkins, GitHub, CI/CD.*