

ABSTRACT

Leading university in Indonesia such as Telkom University, Bandung Institute of Technology, University of Indonesia, and Gadjah Mada University have developed mobile-based academic information systems to improve campus service accessibility, where sensitive information such as personal data, access credentials, and educational information is stored and managed through mobile applications. The current gap is the lack of understanding of specific vulnerability profiles of campus mobile applications and how these vulnerabilities can impact the security of educational institutions. This study conducted a comparative analysis of campus mobile application vulnerabilities using OWASP Mobile Top 10 2024 framework due to its widespread global recognition. This study also uses three SAST tools: Androbugs, Mobile Security Framework (MobSF), and Quick Android Review Kit (QARK). There are ten vulnerabilities categories in OWASP Mobile Top 10 2024, from M1 to M10. The test results show that MySIX ITB and WeAreUI have the highest vulnerabilities with 24 out of 30 vulnerabilities compared to the other two campuses, with MySIX ITB being the most vulnerable application, having five OWASP categories. Additionally, the two most frequently detected OWASP categories were M6 and M8, indicating issues in mobile application architecture of the campuses. Finally, four applications demonstrated resilience against the M2 category.

Keywords: OWASP, mobile security, vulnerability assessment, mobile application, SAST