Assignment Solution

Module 10

Mobile Application Security Assessment and Mitigation

Project Description:

In this project, students will apply their knowledge of mobile platform vulnerabilities, OWASP Top 10 mobile risks, mobile device management, and mobile malware to assess the security of a mobile application. The project will involve identifying vulnerabilities, conducting penetration testing, and developing mitigation strategies.

Project Components:

1. Select a Mobile Application :

Choose a mobile application (Android or iOS) for assessment. It can be a popular app or a custom-built app for testing purposes.

2. Mobile Application Assessment :

Conduct an initial assessment of the selected mobile application to understand its functionality and potential security risks. Identify the OWASP Top 10 mobile risks that may be relevant to the application.

3. Vulnerability Scanning :

Use mobile application vulnerability scanning tools (e.g., MobSF, OWASP ZAP) to perform automated scans of the mobile app. Document and analyze the findings from the scans.

4. Manual Testing and Penetration Testing :

Perform manual testing and penetration testing on the mobile application. Test for vulnerabilities such as insecure data storage, weak authentication, or insecure communication. (Please ensure you have written permission to test the app)

5. Building an Android Payload :

As an educational exercise, build a benign Android payload to demonstrate how malicious payloads could be constructed. Emphasize ethical and responsible use.

6. Mitigation Strategies :

Develop a comprehensive mitigation plan that addresses the vulnerabilities and risks identified during the assessment. Include recommendations for secure coding practices and mobile app hardening.

7. Reporting :

Create a detailed report summarizing the mobile application security assessment process, findings, and mitigation recommendations. Include a risk assessment and priority ranking for vulnerabilities.

8. Presentation :

Students must present their findings, mitigation strategies, and recommendations to the class or instructor. Discuss the significance of mobile application security in the context of real-world mobile threats.

Project Benefits:

- Provides practical experience in assessing and securing mobile applications.
- Reinforces knowledge of mobile platform vulnerabilities and OWASP Top 10 mobile risks.
- Emphasizes the importance of secure coding practices in mobile app development.
- Encourages responsible ethical hacking practices in a controlled environment.

This project allows students to gain hands-on experience in mobile application security assessment and penetration testing while focusing on real-world vulnerabilities and risks. It also highlights the importance of securing mobile applications in an increasingly mobile-centric world.