Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat
Department of Computer Science and Engineering
B.Tech III (Semester VI)
Information Security and Cryptography- CS302

Lab Assignment 1: Security risk identification and mitigation with security best practices

Refer to the security goals viz., Confidentiality, Integrity and Availability discussed in class. Consider the following case studies of different digital systems that you use daily. For each case study do the following:

1) Identify different modules in the system

2) Identify the security risks for each module. Categorize the risk into three categories viz., confidentiality, integrity and availability. Give proper justification of your answer.

3) Propose security best practices to mitigate each risk identified in step 2.

Case Study I: A Laptop/personal computer

Identify different modules of Laptop/personal computer system viz., Operating System, Files, Folders, Software, WiFi Drivers etc. You can explore/imagine your laptop/computer for identification of possible modules. For each module, identify and elaborate the security risk for Confidentiality, Integrity, and Availability. Propose the security best practices viz., strong password, biometrics, folder encryption, antivirus install, system updates, access control, awareness etc. Write your answer in the below format.

Module 1:

Name of the Module:

Functionality of the module:

    (a) Potential Risks for Confidentiality:

        Mitigation/security best practices:

    (b) Potential Risks for Integrity:

        Mitigation/security best practices:

    (c) Potential Risks for Availability:

        Mitigation/security best practices:

Module 2:

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Case Study II: A Mobile Phone

Case Study III: A Smart Watch

Case Study IV: A Web Server

Case Study V: A biometric attendance system installed in the department