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**College of Informatics and Computing Sciences**

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**Score: /**

**Year and Section: IT-4103**

**Date:**

**Exercise: Using the CVSS Calculator on the FIRST Website**

**Objective:**

You will analyze a complex vulnerability and determine the correct CVSS base metric group values and vector string. By completing this exercise, you will understand how to accurately assess vulnerability impact and complexity using the CVSS calculator.

**Scenario 1:**

A vulnerability has been discovered in an online banking application. This vulnerability, known as “**Session Hijack Attack**”, allows a malicious actor to hijack an active user session, gaining access to their account with full permissions to view and modify account details, initiate fund transfers, and view personal information. Here are the specifics of the attack:

- **Attack Vector:** The attacker needs access to the same network as the target user. By monitoring traffic on a shared network (like a public Wi-Fi), the attacker intercepts the session token and hijacks the session.
- **Attack Complexity:** This attack requires the attacker to position themselves on the same network as the user and use specialized tools to intercept the session token. However, once on the same network, the attack is relatively straightforward.
- **Privileges Required:** The attacker does not need to authenticate or gain any privileges within the banking application to hijack the session; intercepting the session token alone is sufficient.
- **User Interaction:** The attacker must wait for a legitimate user to log in and establish a session to exploit the vulnerability. However, no additional action is required from the user beyond normal login behavior.
- **Scope Impact:** Once the attacker has control of the session, they gain complete access to the account with the same permissions as the user.
- **Confidentiality Impact:** The attacker gains access to sensitive financial and personal data within the banking account.
- **Integrity Impact:** The attacker can modify account details, including initiating transfers, which impacts the integrity of the financial data.
- **Availability Impact:** The attacker could perform actions that might temporarily restrict legitimate users from accessing their accounts (e.g., locking accounts by changing credentials).



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**Scenario 2:**

A telecommunications company operates a secure network infrastructure that includes routers, switches, and servers located in a controlled environment. However, an internal employee has discovered a physical vulnerability: an unsecured service panel on one of the routers that can be easily accessed in a maintenance room. This vulnerability allows unauthorized personnel to connect a device directly to the router, potentially gaining access to the network.

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**Tasks:**

**Scenario 1:**

1. **Navigate** to the CVSS calculator on the FIRST website:
2. **Analyze the 2 scenarios** and **identify the correct values** for each of the following CVSS base metrics:
  - **Attack Vector (AV)** - N
  - **Attack Complexity (AC)** - L
  - **Privileges Required (PR)** - N
  - **User Interaction (UI)** - R
  - **Scope (S)** - U
  - **Confidentiality (C)** - H
  - **Integrity (I)** - H
  - **Availability (A)** - L
3. **Construct the Vector String** based on the identified base metrics.
  - CVSS:3.0/AV:N/AC:L/PR:N/UI:R/S:U/C:H/I:H/A:L
4. **Calculate the CVSS Score** using the selected values and provide screenshots.
  - 8.3 (High)



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**Scenario 2:**

5. **Navigate** to the CVSS calculator on the FIRST website:
6. **Analyze the 2 scenarios** and **identify the correct values** for each of the following CVSS base metrics:
  - **Attack Vector (AV) - P**
  - **Attack Complexity (AC) - L**
  - **Privileges Required (PR) - N**
  - **User Interaction (UI) - N**
  - **Scope (S) - C**
  - **Confidentiality (C) - H**
  - **Integrity (I) - H**
  - **Availability (A) - H**
7. **Construct the Vector String** based on the identified base metrics.
  - CVSS:3.0/AV:P/AC:L/PR:N/UI:N/S:C/C:H/I:H/A:H
8. **Calculate the CVSS Score** using the selected values and provide screenshots.
  - 7.6 (High)