**USC UPSTATE**

**CSCI 455: Computer Security**

**Spring 2019**

**Homework Assignment 1**

**Problem 1**

1. **[20 Points]** Give an example where compromise of confidentiality leads to compromise of authenticity.

**When alice steals bob’s password and logs into his accounts. Stealing the password compromises confidentiality and logging into his account compromises authenticity. Generic example: Eavesdropping provides access credentials to log into account.**

1. **[20 Points]** Give an example where compromise of authenticity leads to compromise of confidentiality, integrity and availability.

**When alice logs into bob’s account, she can change his password, transfer funds or modify the profile. Logging into bob’s account compromises authenticity and confidentiality while changing his password compromises integrity and availability.**

**Generic example: Impersonation that leads to hidden data, changing data.**

1. **[20 Points]** Give an example where compromise of integrity leads to compromise of authenticity, confidentiality and availability.

**Changing bob’s password compromises integrity by changing the data on his account. This also compromises confidentiality as alice can see any of bob’s information. This compromises availability as it prevents bob from being able to access his account. This compromises authenticity since an unauthorized user made a change.**

**Generic Example: Data tampering with man in the middle.**