

# FAST National University of Computer and Emerging Sciences

---

## Introduction to Software Engineering SE-110

### Home wok (Requirement Engineering)

---

Submission Deadline: Wednesday, March 25, 2020(@ 4:00 PM)

A. What is the difference between safety and security non-functional requirements?

Safety is about the danger of prompting/causing harm, to information, to things or to individuals. Security is tied in with forestalling undesirable access to information, the product itself, or the framework where the product works.

Safety is achieved against the un-intentional failure or harm to the system while security is achieved against non-desirable outcomes of intentional human actions or human behavior.

**Example of security threats:** Interception threats that allow an attacker to gain access to an asset. Interruption threats that allow an attacker to make part of the system unavailable.(can be solved by the end to end encryption)

**Example of safety threats:** Recovery of data due to power failure or any external factor, making the user experience safer. (solved by preventing, detecting, and reacting to malicious harm and exceptions)

B. Give some examples of conflicting non-functional requirements.

**Security and usability:**

The problem with focussing on malicious attackers is that it ignores the fact that non-malicious users may also compromise the system usability in order to achieve security.

**Ease-of-use and Time/Performance:**

For instance, wizards are often easy to use for guiding users through one-time or tasks performed seldom. However, the same operation would probably be quicker to do in some more traditional ways, e.g., a command-line tool or a GUI interface.

**Cost vs Fault Tolerance/Backup maintenance/Availability:**

In order to increase fault tolerance and availability of the software, the cost is increased too as duplicate data storage is required to make it available, as a backup.