

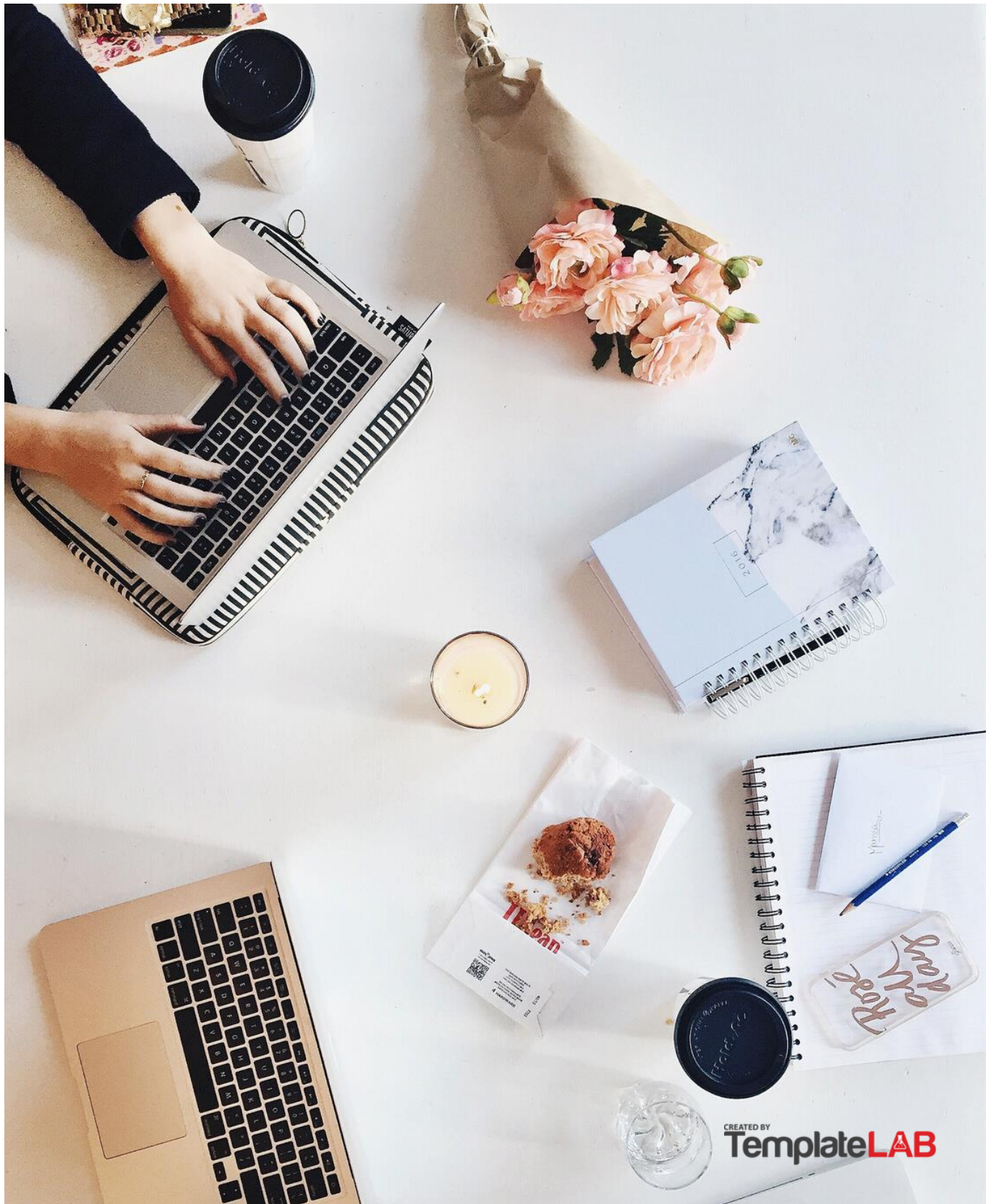
18 AUGUST 2023

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SOEN6222

## Ice Task 2 SOEN6222



## **What are Non-Function Requirements (NFR)?**

Non-functional requirements on a software system include development expenses, operational costs, performance, dependability, maintainability, portability, and robustness. They are critical for providing a great user experience and avoiding delays, budget setbacks, and dissatisfied customers. They also bridge the gap between the expectations of developers and the needs of customers, saving rework and preventing product failures. Non-functional needs that are effectively integrated into the product development process can drastically cut costs and boost customer satisfaction. (Jama Software, 2023 )

### **Non-functional requirements focus on the “ilities” of the product.**

Quality, dependability, manufacturability, usability, serviceability, and upgradeability are all examples of "ilities" in a product. Non-functional requirements are concerned with improving the user experience and describing the system's characteristics, restrictions, or interactions with external parts. Compliance with legal rules, software quality traits, assuring performance in dependability, availability, scalability, and optimising user experience are examples of these criteria. Non-functional needs may differ depending on customer expectations; however, a tentative list of possible categories might serve as a starting point. (Jama Software, 2023 )

What are the key types of non-functional requirements?

Performance, scalability, portability, compatibility, dependability, availability, maintainability, security, localization, and usability are the most common. However, there are a variety of non-functional needs that can be included in your checklist. (AltexSoft , 2022)

Here, are some examples of Non-functional requirements:

1. Users must change the initially assigned login password immediately after the first successful login. Moreover, the initial should never be reused.
2. Employees are never allowed to update their salary information. Such attempts should be reported to the security administrator.
3. Every unsuccessful attempt by a user to access an item of data shall be recorded on an audit trail.
4. A website should be capable enough to handle 20 million users without affecting its performance.
5. The software should be portable. So, moving from one OS to another OS does not create any problems.
6. Privacy of information, the export of restricted technologies, intellectual property rights, etc. should be audited.

(Martin, 2023)

Here are the 5 types of non-functional requirements I have chosen:

SECURITY

**Security** — Does your product store or transmit sensitive information? Does your IT department require adherence to specific standards? What security best practices are used in your industry? (Rome, 2023)

Security is a non-functional criterion that ensures all data inside the system, or its components is safe from malware assaults or unauthorised access. However, there is a catch. The vast majority of non-functional security criteria may be translated into actual functional counterparts. If you want to prevent unauthorised access to the admin panel, describe the login flow and distinct user roles as system behaviour or user actions. (Indeed Editorial Team , 2022)

Consider implementing nonfunctional security elements to protect sensitive data. Professionals in healthcare facilities, for example, use secure databases to maintain patients' medical records. Firewalls may be used to prevent unauthorised access to corporate databases. Here are some examples of common software security measures:

1. **Creation of Accounts:** Systems might necessitate users to establish accounts for accessing applications housing data and showcasing profiles. Typically, a security mechanism grants entry to these accounts upon input of the correct username and password.
2. **Generation of Passwords:** Access to an application might be withheld until the user devises a robust password. For instance, a robust password may comprise a specific character count and an uppercase letter.
3. **Responding to Security Questions:** A product's security protocol could prompt users with queries only they can answer. This aids in confirming a user's identity during login. Examples of security question topics encompass the colour of one's initial car or the maiden name of their mother.
4. **Account Locking:** Following a designated number of unsuccessful login attempts, a security system could initiate an account lock to safeguard a user's data against potential breaches. To regain access, a user typically contacts the company to validate their identity and establish a new password.

(Indeed Editorial Team , 2022)

## USABILITY

**Usability** — How easy is it to use the product? What defines the experience of using the product? (Rome, 2023)

- Usability pertains to the capability of effectively utilizing a specific product, encompassing aspects like:
  1. **Navigation:** In cases of product usability, individuals can effortlessly traverse its interface. For instance, when a person interacts with a proficient user interface (UI) for a streaming platform, they can readily comprehend how the application arranges its content and locate sections like settings.
  2. **Feature Intent:** With heightened usability, users can readily discern the purpose and functionality of a feature. As an example, they might anticipate that interacting with a button adorned with an image of a magnifying glass will initiate the opening of a search bar.
  3. **Performance Excellence:** Optimal performance signifies that the functionalities of a system are operating effectively and in alignment with developers' expectations. Consider an application claim suggesting enhancement of a smartphone's battery life; users can then

evaluate battery performance over time to ascertain if the product delivered the anticipated results.

(Indeed Editorial Team , 2022)

## LOCALIZATION

A localized application has features that match the geographical location of its users, including aspects such as:

- Languages
- Currencies
- Measurements, such as pounds vs. kilograms
- Time zones

(Indeed Editorial Team , 2022)

## SPEED

The response time of an application to commands is determined by its speed. When you type a word into a search engine, for example, the speed of the engine impacts how soon you obtain search results. Speed also includes evaluating a system's capacity to handle an increasing workload as you utilise multiple programs concurrently. For example, a user may capture photos with a camera app while listening to music with an audio app. You can measure a device's speed by running multiple programs at the same time and measuring how quickly they produce results. (Indeed Editorial Team , 2022)

## COMPATIBILITY

**Compatibility** — What are the minimum hardware requirements? What operating systems and their versions must be supported? (Rome, 2023)

When additional apps are running on a device, highly compatible systems often perform effectively. People with various operating systems can also utilise the same programs thanks to compatibility. A compatible photo-sharing app, for example, may provide the same functions on an iOS smartphone as it does on an Android device. Reading the product description, which may include operating system details, might help you identify compatibility with a certain application. (Indeed Editorial Team , 2022)

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