**2. Prioritizing NFRs (Muntadher Hani 20198780)**

Non-functional requirements play an important role in the field of developing system, they define how the system should perform rather than what it does. Each of the non-functional requirements has its own priority based on different factors and depending on the system they are being developed for. They ensure that the system will be highly qualified and has high performance. Unlike functional requirements which define the specific behavior of a system, non-functional requirements focus on how the system performs its functions. Therefore, prioritizing these requirements helps developers focus on what matters the most.

However, there are many factors that can affect this prioritization for the non-functional requirements, such as the following:

* **Target audience:** the needs and expectations of the users play an important role in prioritizing the non-functional requirements and understanding who will use the system is critical.

For example, for an e-commerce system, usability is a priority because the system should provide a user-friendly interface for the different types of customers especially those with limited technology knowledge.

* **Business goals and objectives:** the main aspect to focus on while developing a system.

It decides the most prioritized non-functional requirements to develop.

For example, for an e-commerce system, **security** needs a priority because the system should aim to secure sensitive customer data involved.

* **Type of product or service:** the nature of the product or service impacts the system’s functionality.

For an e-commerce system selling physical products, **reliability** must take a priority.

* **Expected traffic:** for an e-commerce system, promotions and sales can cause high traffic which may lead to a crashed system, therefore **scalability** plays an important role to ensure the system works smoothly.
* **User expectations:** the system should meet users expectations to avoid any type of frustration, therefore and for an e-commerce system, **performance** non-functional requirement is important to ensure fast loading times, and quick search results.

**Ranking non-functional requirements for an online shopping system.**

This ranking list will focus on the non-functional requirements for an online shopping system (e-commerce):

1. **Security:** is the top priority for an online shopping system, it involves protecting user data like payment details, sensitive information about addresses. It should prevent cyberattacks and fraud to gain customer trust.
2. **Availability:** the platform must be accessible 24/7 to meet the needs of the different types of customers, especially during peak time like sales or holidays.
3. **Performance:** slow loading pages or delays in checkouts and payments may lead to frustration and drive the users away. High performance ensures fast browsing and smooth transactions which improves the customer’s shopping experience.
4. **Reliability:** ensures that the system performs as expected without crashes or errors, especially when processing orders, payments and inventory management.
5. **Usability:** user-friendly interfaces are essential to keep the customers engaged and ensure they can navigate the website easily, which leads to smoothness throughout the shopping process, therefore customer’s satisfaction.
6. **Scalability:** to ensure that the system can handle the traffic during specific circumstances such as the Black Friday event. It allows the system to grow the business without sacrificing performance.
7. **Maintainability:** to ensure that the system is easy to update, fix, or improve. Systems that are hard to maintain can result in long downtime periods during bug fixes or updates.
8. **Compatibility:** the system should work across different browsers, devices and operating systems to ensure all customers have access regardless of their smart device.
9. **Portability:** the system’s ability to run across the different types of environments or servers.

By prioritizing these non-functional requirements, the system should operate as expected with a high level of maintainability while meeting the users expectations and the overall business objectives.