

# Let AI Evaluate Your Understanding of Non-Functional Requirements

Test your knowledge of non-functional requirements and their significance in system design.

## We'll cover the following

- Assessment 1: Cloud-based file store
- Assessment 2: Financial trading platform
- Assessment 3: Spacecraft operations
- Assessment 4: Twitter

We have now covered the non-functional attributes of a system. Take the following AI-powered assessments to solidify and test your knowledge of non-functional attributes in real-world scenarios. Don't worry, our AI mentor will guide you along the way.

## Assessment 1: Cloud-based file store

You are leading a team developing a cloud-based file-sharing platform for a multinational corporation. You are tasked to ensure that the platform has the following attributes:

- The users of the platform have worldwide 24/7 accessibility to files
- Depending on the time and need, the platform is able to handle an increasing number of requests arriving from different parts of the world

Keeping these requirements in view, state **two of the most important and relevant non-functional requirements** from the list provided below such that their inclusion in the design will enable us to achieve the scenario mentioned above.

- Maintainability
- Scalability
- Fault tolerance
- Reliability
- Availability

State the two most important non-functional requirements for this system

H<sub>1</sub> H<sub>2</sub> H<sub>3</sub> | **B** *I* | :≡ ≡<sup>1</sup>/<sub>3</sub>≡ | ≡≡≡ | ≡≡≡ | ✕

Availability  
scalability

✎ Evaluate

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Scalability is crucial because the platform needs to handle an increasing number of requests from different parts of the world as per the time and need. This means the system should be able to scale up or down based on the demand.

Availability is also important because the users of the platform should have 24/7 access to the files from anywhere in the world. This means the system should be designed to be always available and operational.

Keep up the good work!

✕ Did you find this helpful?

## Assessment 2: Financial trading platform

Imagine a banking application for financial transactions and buying online products. This platform allows users to obtain their account status, transfer money , pay utility bills, and generate bank statements.

List the following **non-functional requirements in the correct order**, starting from the most important non-functional requirement to the least important non-functional requirement:

- Low latency
- Consistency
- Security

List the options given above in their correct order

H<sub>1</sub> H<sub>2</sub> H<sub>3</sub> | **B** *I* | ☰ ☷ | ≡ ≡ ≡ | ✕

security consistency low latency

 Evaluate

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1. Security is indeed the most important non-functional requirement for a banking application. It's crucial to protect sensitive user data and financial transactions from any potential threats or breaches.
2. Consistency ensures that all users have the same view of the data at all times, which is vital for a banking system.
3. Low Latency is also important for a smooth user experience, but it comes after Security and Consistency in terms of priority.

Keep up the good work!

✕ Did you find this helpful?  

## Assessment 3: Spacecraft operations

A space agency relies on critical systems to operate spacecraft, conduct space missions, and gather valuable data for scientific research. Imagine a scenario where a spacecraft is on a mission to explore a distant planet, and it encounters a hardware malfunction or a communication disruption with the control center on Earth.

State **one of the most important and relevant non-functional requirements** from the list provided below such that its inclusion in the design would enable us to recover from the scenario mentioned above. Please also provide proper **reasoning** behind your decision:



- Reliability
- Maintainability
- Consistency
- Fault tolerance
- Availability
- Scalability

**Note:** You must provide reasoning along with the name of the non-functional requirement in your answer.

State the most important non-functional requirement for this system along with proper reasoning

H<sub>1</sub> H<sub>2</sub> H<sub>3</sub> | **B** *I* |   |    | 

Fault tolerance



Evaluate

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That's correct! However, to fully evaluate your answer, could you please provide the reasoning behind your choice of fault tolerance as the most important non-functional requirement in this scenario?

× Did you find this helpful?  



## Assessment 4: Twitter

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Consider a scenario for Twitter's recently introduced feature allowing users to stream live video directly within their tweets. As a result, the number of users streaming live video has surged exponentially. Users are consequently experiencing delays, and the system struggles to handle the increased load.

State **one of the most important and relevant non-functional requirements** from the list provided below such that its inclusion in the design would enable us to handle the scenario mentioned above.

- Reliability
- Maintainability
- Consistency
- Fault tolerance
- Availability
- Scalability

State the most important non-functional requirement for this system

H<sub>1</sub> H<sub>2</sub> H<sub>3</sub> | **B** *I* | :≡ ≡<sup>1</sup>/<sub>2</sub>≡ | ≡ ≡ ≡ | ✕

Scalability horizontal scaling

 Evaluate

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That's correct! Horizontal Scalability is indeed the most important non-functional requirement in this scenario. This is because horizontal scaling, which involves adding more machines to the existing pool, can effectively handle the increased load by distributing it across multiple servers. This is more suitable for the given scenario than vertical scaling, which involves adding more power to an existing machine and has limitations. Good job! Keep up the good work.

✕ Did you find this helpful?  

Fault Tolerance

Put Back-of-the-envelope Numbers in Pers...

