

Task 1

Define technical requirements

Understanding priorities and formulating measurable requirements

Here is the background information on your task

Technical requirements complement the functional requirements, which are set by business and define how the system should behave. Technical requirements are also called non-functional requirements or simply NFRs. Capturing technical requirements is usually under the responsibility of architects, but it is always done in cooperation with the client.

In order to be able to define non-functional requirements, priorities for the system have to be clear. The priorities vary depending on the situation and exist to clarify what is most important and what is less necessary. To understand what the priorities are, you need to ask questions for example like these:

- When the user is making a booking, is it more important to have 100% up to date calendar information, or to have a smooth browsing experience of the available slots?
- Is it ok to give up calendars being fully up to date if we gain smooth browsing of free slots?

Requiring perfection in every aspect is extremely expensive and, in most cases, not even possible. Technical requirements are an agreement with the client on what is good enough for this system.

For any healthcare system, security is one of the top priorities, as health information is sensitive personal data that must be carefully protected. Other priorities would include usability and reliability, as Digital Healthcare now wants to improve their user experience.

Here is your task

You have asked the client at Digital Healthcare to send you what new technical requirements they suggest having in addition to the existing ones. You have received an answer, where they have revisited some of the existing requirements and added a few new ones they would like to have. You will now go through the suggested requirements to be prepared for a meeting, where decisions about them will be made. You need to make sure the suggested requirements are explicit and clear when determining if they should be required or not.

You need to identify all requirements that cannot be accepted as such but require more clarification. Read the technical requirements suggested by your client and select the requirements that need to be reformulated.

Resources to help you with the task

Here is a list of some of the most common concerns for non-functional requirements. There are much more than these, but they will give you the idea:

- **Scalability**
 - How many users must be supported?
 - Is the number of users expected to increase in the future?
- **Performance**
 - How fast should the system respond?
- **Recoverability**
 - How does the system recover after a failure?
- **Security**
 - How should data be protected?
 - How are different sorts of attacks prevented?
- **Maintainability**
 - Does the system need to be easily maintained?
- **Operability**
 - How is the system operated and managed?

- **Availability**

- Does the system need to be available 24x7?


Good non-functional requirements are clear, measurable, and realistic.

- Clear requirements ensure common understanding for everyone regarding what the requirement means
- Measurable requirements can be verified by testing the system
- Realistic requirements define targets that can be reached with reasonable costs

Start your task

You may only credit this task to your CV if you make a genuine attempt at the work.

Practice or learning attempt:




Q 1/4: Read these technical requirements suggested by your client for system performance and select the one that needs to be reformulated.

The appointment reservation service must be very fast.

The website must support 5000 concurrent users without slowing down.

The pages on the website should be loaded in 90% of the cases in less than 2 seconds, and in 99% of the cases, in less than 5 seconds.



Q 2/4: Read these technical requirements suggested by your client for video performance and select the one that needs to be reformulated.

The system must support a total of 100 simultaneous video calls between a patient and a doctor

Video quality needs to be good enough to have users feeling comfortable.



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Q 3/4: Read these technical requirements suggested by your client for security and select the one that needs to be reformulated.

All users of the system must identify themselves with multi-factor authentication.

All views of medical records of patients must be written to an audit log and stored for 5 years

The system needs to be secure in all possible ways.



Q 4/4: Read these technical requirements suggested by your client for availability and select the one that needs to be reformulated.

The application must always be available to any user

The website must be compatible with all major browsers, i.e. the latest versions of Firefox, Chrome and Edge (Chromium)