##### Requirements and quality expectations

The description of the project in the project brief may be quite unstructured. This is not useful to you - you need the requirements to be clearly identified so that you can plan the work needed to achieve them and tick them off as they are completed. In this section, the goal is to list the high-level requirements as the first step in defining the scope of the project. These high-level requirements will be further elaborated in activity [A05](https://p3.express/manual/v2/a/05/).

Remember that there are usually two categories of requirement - [functional and non-functional](https://www.geeksforgeeks.org/functional-vs-non-functional-requirements/). You should aim to identify both, so this suggests some more structure for the agenda of the kick-off meeting.

The quality expectations define a set of criteria that can be used at the end of the project to determine whether the project goals have been met. For a functional requirement in a software development project, for example, the quality expectations might be defined in terms of the constraints on the project. If the requirement is to produce charts based on input data, you may only have access to a certain type of data and you may want to restrict the types of chart you will produce in order to control the amount of work. The quality expectations in such a case would make these limitations explicit - i.e. the client will not expect you to handle other types of data or produce other charts.

For non-functional requirements, such as ease of use or aesthetic appeal, the quality expectations might define the methods you will use to test the requirements and the thresholds that might be considered acceptable. In a design-heavy project, for example, the aesthetic appeal of the final product may be very important. You could make a plan to gather feedback from an appropriate group of people and ask them to rate the product from an aesthetic point of view. If the average response is above 5 on a scale from 1 - 10, you could consider the requirement achieved.

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After meeting with the client different requirements were discussed.

These requirements are the ones the interactive web-based visualization must have and are gonna define the scope of the project. All these are defined as functional requirements , as all these are functionalities that will necessarily be incorporated into the system as a part of the contract with the client.

First, this visualization is going to be a 3D world globe, which the user will be able to turn and zoom in or out in any part of the map. This means that the resolution of the globe will need to increase as the user zooms into a specific area. For data to be shown in some places, interpolation between two points will need to be applied, whereas in most cases a linear progression can be precise enough, it won't always be the proper one to use. Moreover, the user will need to be able to choose a particular place so changes on that exact area can be spotted.

Secondly, the visualization will add different parameters that users will be able to change, such as, global warming temperature and date time. Apart from this, information about the sea level in that area will need to be shown while the user makes changes . Also, animations of the globe using time lapses will be aviable, so geographical or sea level changes can be noticed during periods of time.

Lastly, the application will need to be available online. This means that the python code will have to run on a web page and be accessible to any internet user. For this to be done a ubuntu linux based server will be provided to us by Napier university.

There are also a few requirements, which were not asked by the client, but we would like to add them to the system. These types of functionalities might not be added on the final version of the system.

A search bar so the user can put which exact place they would like to see without having to search for it on the map. Also, the population in that area will also be shown on the map, so users can realize how the sea level affects the citizens living in the area shown and where they would need to move to. Last, the users will also have the chance of viewing the database used for the visualization.

Apart from the functional requirements shown, there are also other non-functional requirements that the system will also need to follow.

Portability, the system will need to work in the main web environments that are used by the majority of users, such as Google Chrome, Firefox, Safari and Microsoft Edge.

Security, the database used for the visualization will need to be secured, which means that users won't be able to make changes unless they have permission for it.

Maintainability, the programme will have to be available during a long period of time, which will be determined by the period of time that the server is going to be working.

Reliability, if portability and maintainability are met, the system will also be reliable.

Scalability, the programme will need to be able to keep functioning even if new or different data is added to the database.

Performance, the programme will need to run smoothly and avoid bugs or crushes.

Reusability,

Flexibility,

Lastly, the programme will also have a nice looking and easy to use structured web design, so the experience of the user while using it becomes the best one possible.

If all these non-functional requirements are met at the end of the project, the quality expectation will be complete.