Project initiation report

Project description.

Purpose and expected benefits.

We intend to create a fun and well-functioning visualization of the globe that will allow the users to play around and see the change in sea level and its effect on coastlines during the past years. This could be the starting point of a more complex program that would allow predictions of future changes and would consider other information such as weather and melting poles.

The program will run in a web page that should be simple and well looking. It should allow the user to travel around the globe in an easy and intuitive way, as well as travel through the time state of the sea level, running smoothly and with little lag. In other words, we want to design a webpage that will allow observation of the sea level change along the years, all this delivering a great user experience.

This software could bring great benefits for projects that worry about the rise or decrease of the sea level such as new edifications or the conservation of existing ones. It would also help the acknowledgement towards how we human beings are affecting the planet and possibly offer some of the key factors that should be reduced or considered to slow down sea level effects.

Expected cost and duration.

We are not expecting to have any cost for this project, since the only external tool that we intend to use is a server to keep the web running that Napier university will provide us. Apart from that, all the tools that we will be using are free and open source.

All the code will be written using python and we will be using the ETOPO1 dataset that the client provides us. The project is expected to be finished by the 28th of April (Project deadline). We are expecting to finish the mandatory requirements in a short period of time, allowing us plenty of time to implement extra tools and ideas to make a better prototype.

Requirements and quality expectations

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.

Functional requirements
3D world globe able to turn and zoom in or out
Choose a particular place so changes on that exact area can be spotted
Parameters that users will be able to change, such as, global warming temperature and date time.
Information about the sea level in on screen
Animations of the globe using time lapses, so geographical or sea level changes can be noticed during periods of time
Availability online (web-page)

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.

Functional requirements (not client based)
Search bar so the user can put which exact place they would like to see
Population in that area will also be shown on the map
Users will be able to view the databased 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.

Non-functional requirements	
Portability	Run on the main web environments that are used by the majority of users
Security	Database used for the visualization will need to be secured
Maintainabiliy	Programme will have to be available 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	Programme will run even if new data is added to the database
Performance	Programme will need to run smoothly and avoid bugs or crushes
Design	Easy to use structured web design application

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

Stakeholders list.

Here we can find a list of all the people interested and involved in the project:

Name	Role	Contact
Miguel Garcia Hernandez	Project Manager	40494773@live.napier.ac.uk
Lier Martinez de Morentin	Group member	40496253@live.napier.ac.uk
Eduardo Midon Alejadro	Group Member	40489843@live.napier.ac.uk
Juan Alcantara Dominguez	Group Member	40488349@live.napier.ac.uk
Brian Davison	Client	b.davison@napier.ac.uk
Oluwaseun Bamgboye	Sponsor	oluwaseun.bamgboye@napier.ac.uk

Identify and plan the deliverables.

In this section of the report all the requirements described above will be broke down into smaller and more manageable tasks. Here we can also find a '*MoSCoW* 'chart where all the requirements will be separated depending on their relevance and or urgency on this project.

The approach we have decided to follow as a team is based in three main bits:

1. **Understanding** the requirement in order to evaluate the possible challenges.
2. **Research** about the topic to gain the knowledge necessary to overcome those challenges mentioned before.
3. **Implementation** into the project.

This method will be used in all the requirements, keeping track of the progress with a Kanban board, more specifically with different sprints. We have decided that every sprint will have a duration of a week (7 days).

The requirements were discussed with the client and within the group, structuring them in different levels of relevance that are described in the following chart:

MUST	SHOULD	COULD	WON'T
3D representation of the globe	Search bar	Population dataset to see how it affects the sea level	User input of data
Increase the resolution of data	Animation of the historic values	Sound effects	Log in to save the user's favourite searches
Visualization available online	Update the database	2D interactive representation of the globe	Street level zoom
Administrator permissions for the webpage	Users be able to check the dataset	Parameter search	Downloadable 2D map

It is important to point out that the derivable list is subject to change if new requirements are found or asked by the client during the implementation period.

Identify risks and plan responses.

All the possible risks have been evaluated within the group and have been identified in *the 'Follow-up Register'*. Only risks has been assessed, so there is no issues or changes because it is only the start of the project. During the implementation all the new risks will be pointed out and added to the register.
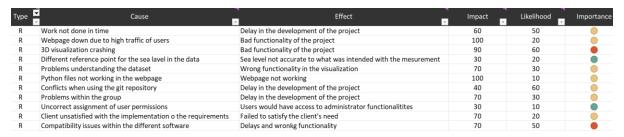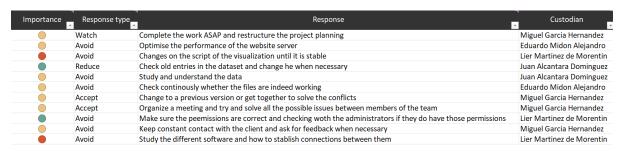
Type	Cause	Effect	Impact	Likelihood	Importance
R	Work not done in time	Delay in the development of the project	60	50	●
R	Webpage down due to high traffic of users	Bad functionality of the project	100	20	●
R	3D visualization crashing	Bad functionality of the project	90	60	●
R	Different reference point for the sea level in the data	Sea level not accurate to what was intended with the mesurement	30	20	●
R	Problems understanding the dataset	Wrong functionality in the visualization	70	30	●
R	Python files not working in the webpage	Webpage not working	100	10	●
R	Conflicts when using the git repository	Delay in the development of the project	40	60	●
R	Problems within the group	Delay in the development of the project	70	30	●
R	Uncorrect assignment of user permissions	Users would have access to administrator functionalitites	30	10	●
R	Client unsatisfied with the implementation o the requirements	Failed to satisfy the client's need	70	20	●
R	Compatibility issues within the different software	Delays and wronkg functionality	70	50	●

Figure 2.- Risk assessment

Importance	Response type	Response	Custodian
●	Watch	Complete the work ASAP and restructure the project planning	Miguel Garcia Hernandez
●	Avoid	Optimise the performance of the website server	Eduardo Midon Alejandro
●	Avoid	Changes on the script of the visualization until it is stable	Lier Martinez de Morentin
●	Reduce	Check old entries in the dataset and change he when necessary	Juan Alcantara Dominguez
●	Avoid	Study and understand the data	Juan Alcantara Dominguez
●	Avoid	Check continously whether the files are indeed working	Eduardo Midon Alejandro
●	Accept	Change to a previous version or get together to solve the conflicts	Miguel Garcia Hernandez
●	Accept	Organize a meeting and try and solve all the possible issues between members of the team	Miguel Garcia Hernandez
●	Avoid	Make sure the peemissions are correct and checking woth the administrators if they do have those permissions	Lier Martinez de Morentin
●	Avoid	Keep constant contact with the client and ask for feedback when necessary	Miguel Garcia Hernandez
●	Avoid	Study the different software and how to stablish connections between them	Lier Martinez de Morentin

Figure 3.- Risk responses

Client acceptance

X _____

Brian Davison
Client

X

Miguel Garcia Hernandez
Project Manager
Signed by: 34da3545-c11e-4c61-8e4d-f812080cd296