

RESEARCH INTO THE SIMULATION OF SHOCK WAVES

Graphical User Interface Plan

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1. Introduction

To ensure we will be meeting our objectives which have been set for our project, user interface designs have been created. These are a necessity for frontend developers to be able to base the structure of how the programs features will be displayed. The user interface allows the user to interact with the program in an efficient manner and for them to be able to best experience the aims of the project in the form of visualising a realistic shockwave.

2. Process

To begin with, a group meeting was held to decide on the features that would be included on the product. These were acquired through the requirements which had been previously stated (refer to the requirements documentation). After getting the whole groups feedback on what should be included the main focus was then on creating the initial sketches. After sketches had been finalised and agreed upon within the frontend team they were then presented to the rest of the group for feedback. After feedback was given the relevant changes were made. This process was repeated when creating the wireframes. This process allowed the whole team to have an influence when it came to the look and the feel of the product. We wanted it this way so that our designs best represented the whole team and also what we all believed to represent the visualisation in the best way possible way.

To create the wireframes the program Axure¹ was used. One of the main reasons for choosing Axure is that it offers all possible tools needed to create the perfect prototype of any product. Previous experience allowed for time efficient production of a prototype.

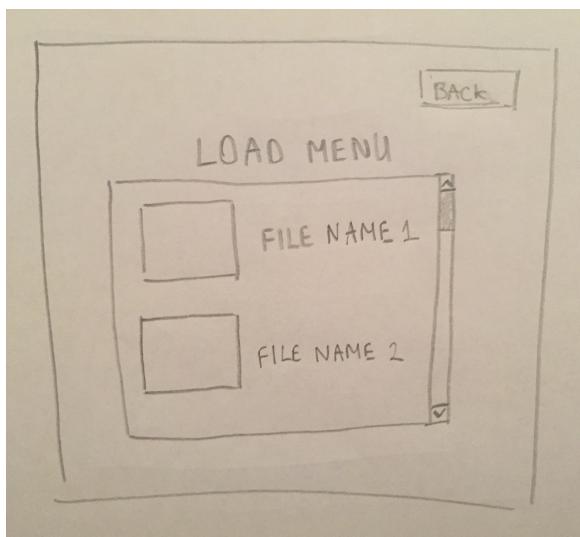
This document records the rough sketches and the wireframes that were created.

¹ [- <https://www.axure.com/>]

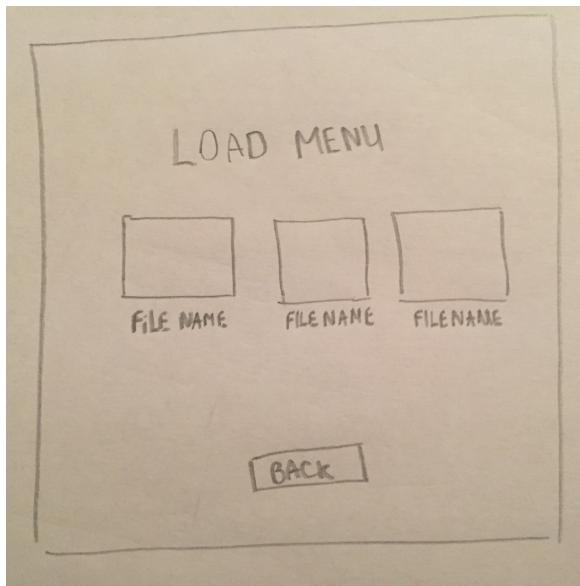
3. Sketches



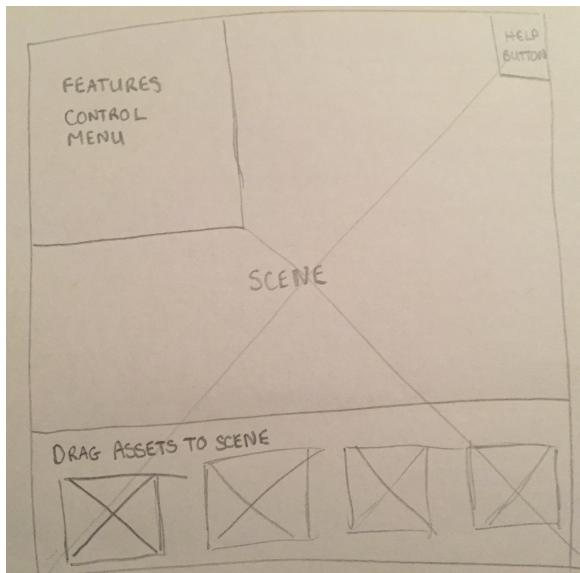
Homepage sketch – displays simple options to either “Start” the application, select the “Help” button to find out the instructions for the application or “Exit” the program.



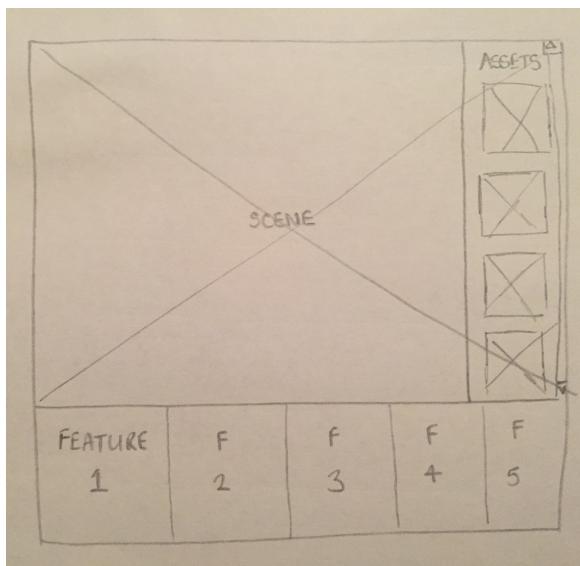
Load menu option 1 sketch – This is the first layout considered to display the different scenes that can be loaded.



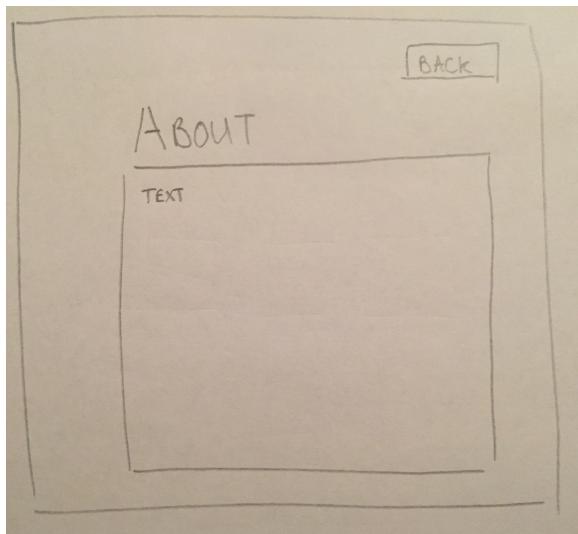
Load menu option 2 sketch – This includes the same content as load menu option 1. The only difference is a slight layout change.



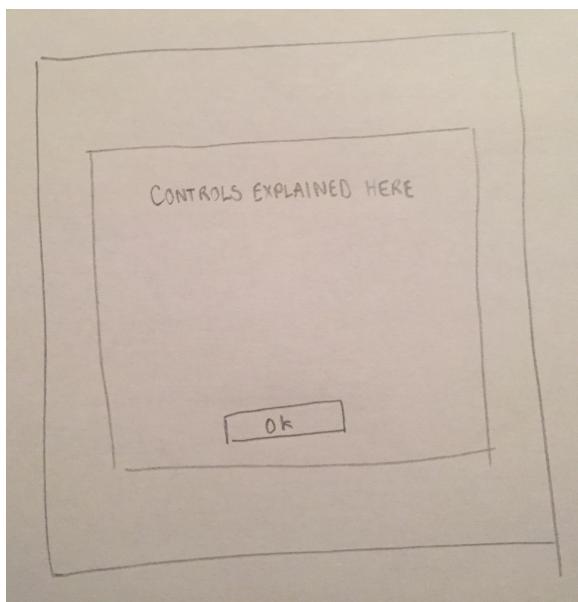
Scene option 1 sketch – This displays the scene in which the shock wave simulation occurs. It displays the visualisation and also the features which can be edited in the scene. See section 4 on wireframes for exact features displayed.



Scene option 2 sketch – This will be the same as above but displayed slightly differently. It was decided to create multiple options so that they could be presented to the group and the feedback would allow us to choose the best option.

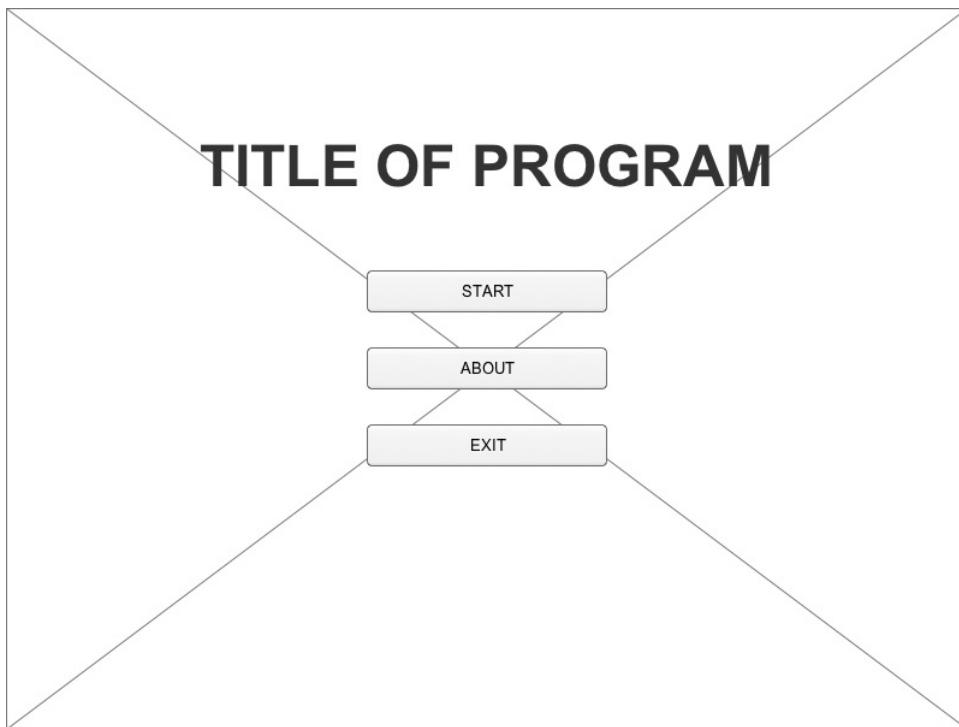


About/Help page which is navigated to from the homepage. Describes what the program is about.

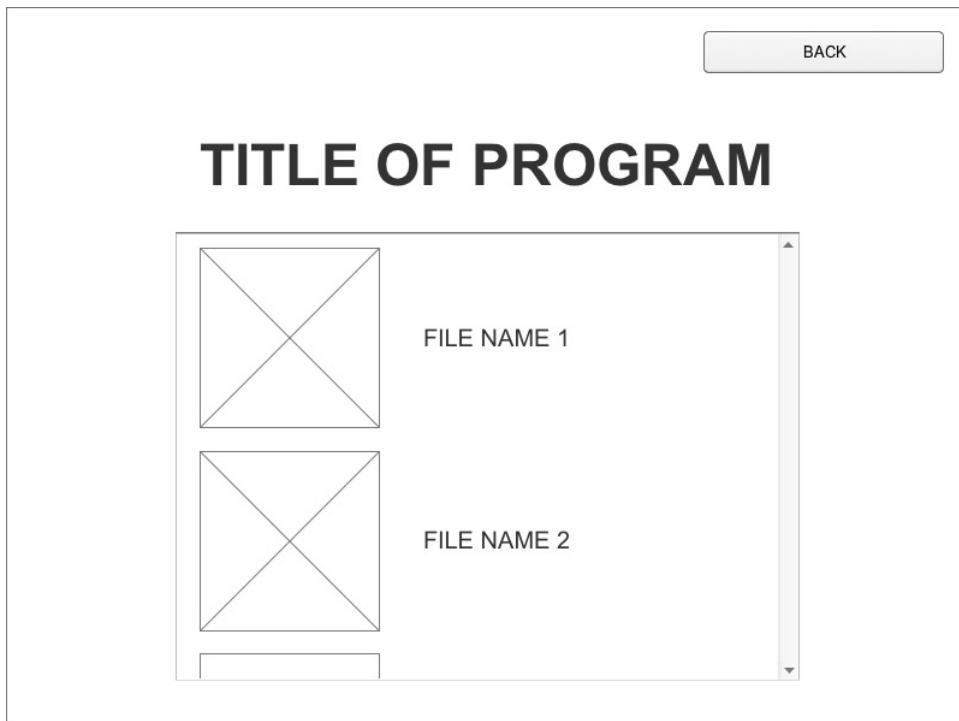


About overlay which is shown when the "help" button is selected in the scene. It will display the instructions for the keyboard controls.

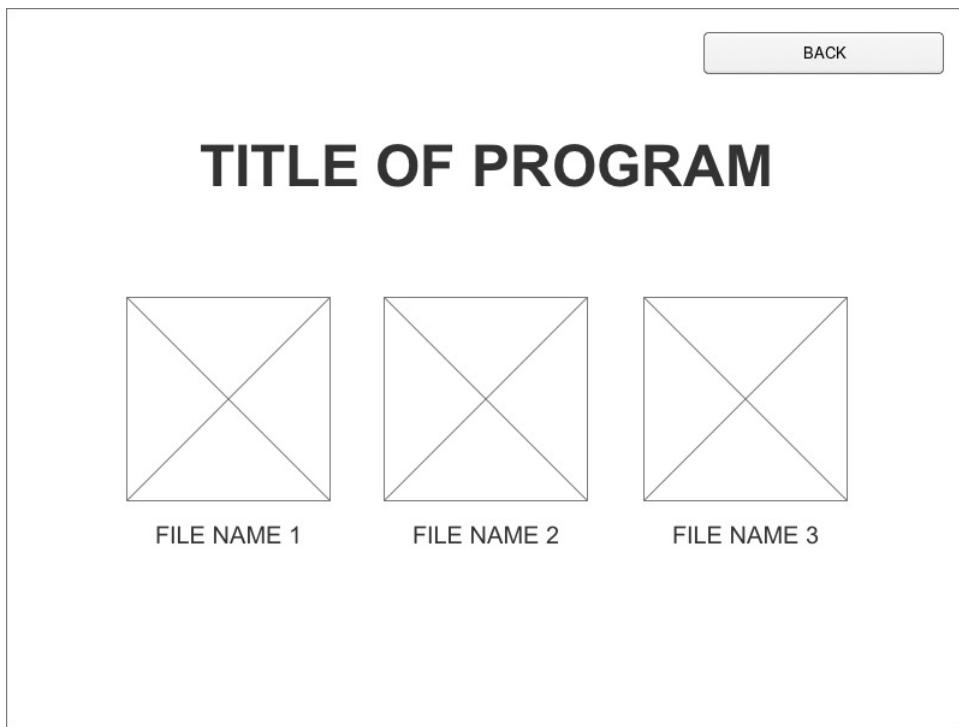
4. Wireframes



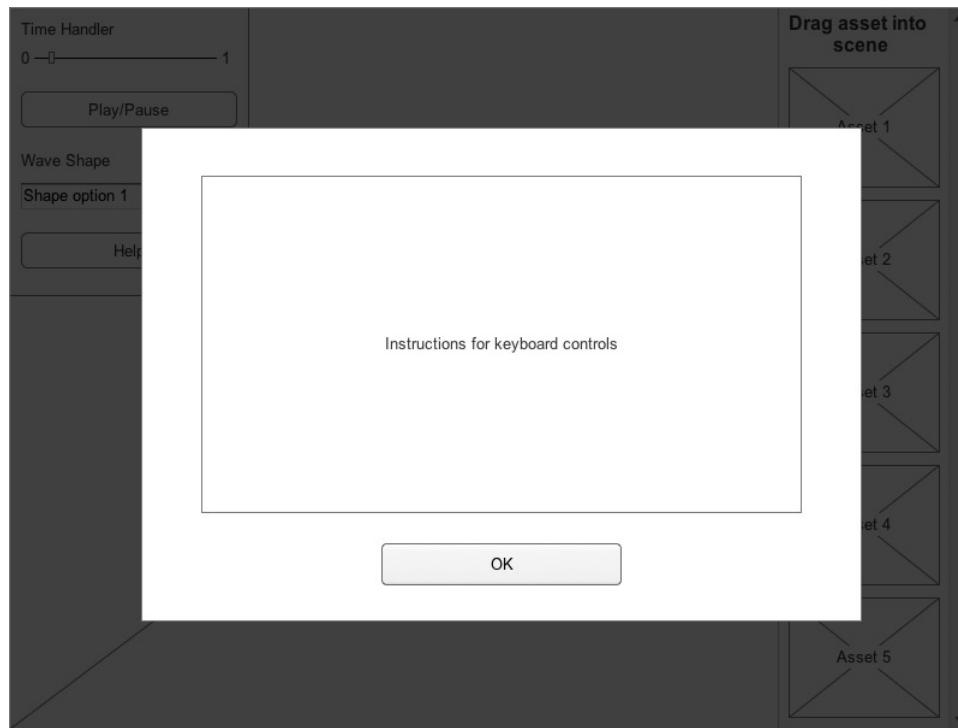
Homepage –
The only change from the initial sketches was the agreement that we would use the word 'About' instead of 'Help'. This is because this section is describing the program, not explaining the controls on how it is used.



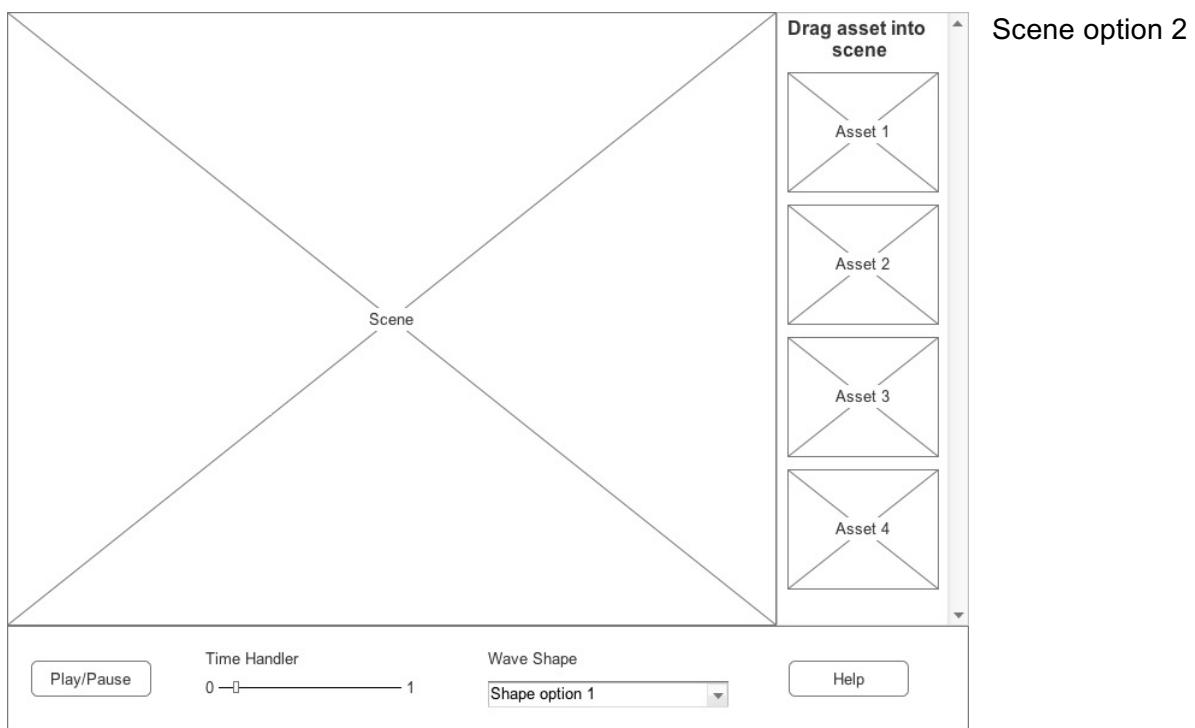
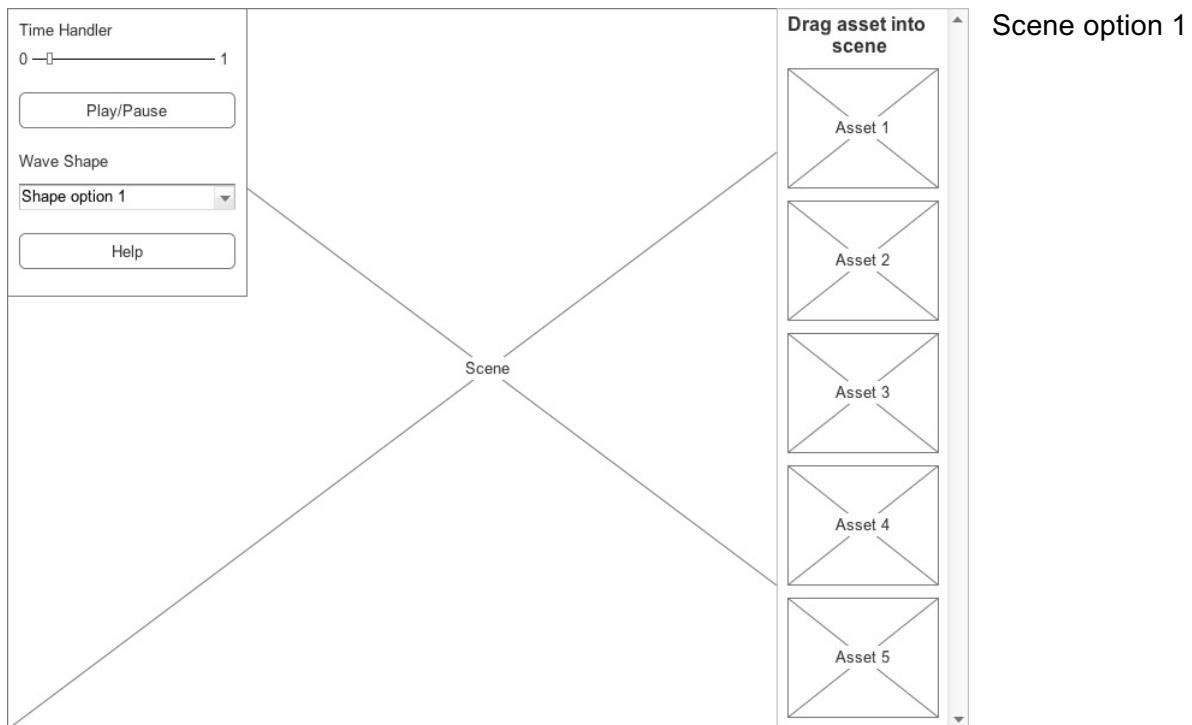
Load menu
option 1 – There were no changes from sketches to wireframes.



Load menu option 2 - There were no changes from sketches to wireframes.



Overlay displayed when help button is pressed in scene



The features included in the scene are as follows:

- Time handler to control the speed in which the shock wave moves
- Play/pause button to toggle whether the program is running or not
- Wave shape option to adjust the shape the wave is visualised as
- Scene insert options for the user to be able to add, move and remove assets from the scene. This allows the user to build their own scene and personalise it.
- A help button which when pressed will display the keyboard controls for using the program