# Skills and Resources

Team: 3200\_35, Sound Meter Data Visualisation.

Goal: Display meaningful sound data using visualisation on a web application that will assist the Australian Navy Medical Officer in identifying sailors that could be experiencing fatigue and other health issues due to extended exposure to large sounds while working aboard the vessel.

This task requires the use of many different skills, of which we will either need to be already proficient at or develop proficiency at an early stage. These skills can be broken up into three distinct categories, namely: front-end skills, back-end skills and general skills.

Front-end skills include:

* HTML and CSS for structuring and styling the web page(s) in which we will output our findings to.
* JavaScript for functionality over the web application
  + Familiarity with a JavaScript library for presenting the data (D3 – Data Driven Documents library).
  + Familiarity with React, a JavaScript library for building user interfaces across a web app.

Back-end skills include:

* SQLite or equivalent database engine library for setting the schema for our database, in which we will store sound data and resulting data after processing.
* Flask for hosting the web application and routing.
  + Python for constructing the Flask web app.

General skills include:

* Sound collection, including operation of a sound collecting device and withdrawing data from the device.
* Ability to comprehend, process and withdraw relevant information from the data resulting from the collection of sound.
  + This involves some level of understanding of the relationship between sound levels and fatigue levels.
* Project management skills, including utilising the scrum agile method to keep our project on track.

Due to the fact that all of the group members have some background in the computer science/software field we are reasonably well equipped to handle most of the challenges that the task presents. All of our group members possess skills in the front-end and back-end categories, however will need to develop our skills in the general category through the following resources:

* Scholarly articles and studies relating to the impact of sound on fatigue; through sound level, frequency and/or consistency.
* Mentorship from our mentor Matthew James from VGW.
* UWA and online material regarding agile methods, specifically the scrum method.

The task also requires access to both hardware and software tools, software tools include:

* JavaScript D3 library
* JavaScript React library
* Flask web app framework for Python

Hardware includes:

* Access to sufficient personal computing power to construct the system.
* Access to a sound recording device.