Software Engineering Project Submission - 2011

Client retains Intellectual Property: Yes
Confidentiality Agreement required: Yes
Project Name: Oceanographic Model display application for mobile devices.

Project Description: The Tasmanian Marine Analysis Network (TasMAN) Project within CSIRO is developing a coastal information system that will help monitor the health of the region encompassing the Derwent and Huon Estuaries and the D’Entrecasteaux Channel and support sustainable management of its multiple uses.

Your task is to produce a mobile, map based application which displays oceanographic model forecast output overlayed on a web map which is optimised for mobile devices. As a starting point, you can assume the model to be overlayed will be a CF compliant 2 dimensional surface model with temperature and salinity as the phenomena to be displayed.

The scope for this project is endless and can be easily extended dependent upon student aptitude. Examples for enhancement include:

- Adding a depth dimension in some manner (visualisation for the depth aspect would be very challenging).
- Adding a time dimension (intuitive and non intrusive UI tools for manipulating this dimension would be a challenge).
- Adding all of the above to display full 4-dimensional model output.
- Animation of a full 4D model set.
- Incorporation of plotting facilities.
- Incorporation of some of our existing web services to deliver things such as real-time sensor data (overlayed on map), plots, etc.
- Clever caching (data and map tiles) in order to render animated models.
- Implementation of your own efficient tiling schemes.

Project Technical Information:
- Webkit mobile browsers (eg. Android, iPhone)
- HTML5
- UI development
- Javascript, JSON

Tasks:
- Requirements elicitation.
- Research best tools, frameworks and software to use for the task and report findings to client.
- Interface designs.
- Software development.
- Alpha demonstration to client.
- Software development.
- Beta demonstration and client handover.

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