Propose a vacation student project for Summer 2018

Deadline for making your proposal(s): 17:00 Friday 23 March. This is a hard deadline.

Please fill in and submit this form multiple times for multiple proposals. Any queries, do ask - Toby.

Project supervisor email *

uli.sattler@manchester.ac.uk

Title of the project *

Who's where in SoCS? Computer Science Office Space Management Tool

Source of funding *

- School funding requested
- You have your own funding (e.g. research grant)

Objective of the project *

The School of Computer Science has a prototype tool for recording who occupies each office within the Kilburn and IT Buildings, but the tool relies on manual updates and is not integrated with our other databases. The objective of this project is to evolve the prototype to production standard, in particular to link it to these database and thus ensure consistency and accuracy.

Number of students requested (justify if > 1) *

1
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Start date, end date, total duration (weeks) *

As soon as possible; roughly 6 weeks depending on the students' ability

The benefit to the School *

The tool the school currently uses to record who occupies which desk, and in which office, is dependent upon Allan Ramsay maintaining it. Allan will retire soon and if the school wishes to continue to enjoy the benefits of Allan's tool it needs to be maintained by someone else. Techso have agreed to undertake the maintenance but with the proviso that some enhancements are made before they inherit it.

The benefit to the student *

The student will be paid and have some real world experience to put on their CV.

Skills needed by the student. *

Essential skills/experience in:
- programming with Python and Javascript.
- creating webpages with HTML and CSS.
- enriching a webpage with Javascript widgets (e.g. JQuery).
- developing and working with database schema.
- writing SQL queries.
- storing data in a database supplied from a web form.
- retrieving data from a database and displaying it on a webpage.

Desirable to have experience of retrieving data from LDAP ideally using Python.
Details of the work that the student would do *

The server side of the tool is written in Python with a MySQL database to store the data. The client side is served over the internet and uses Javascript, HTML and CSS to display an interactive two-dimensional floor plan of the Kilburn and IT Buildings. As the user moves their mouse over the floor plan they can view and record information about the area of the floor plan indicated by the mouse.

The successful candidate will:

* familiarise themselves with the current tool and write documentation sufficient for someone else to maintain the tool. Throughout the project continued documentation for future developers will be essential;

* continually consider and safeguard against security breaches. For example the validation of user input will be critical to prevent SQL injection attacks;

* write a component to retrieve contact information (e.g. phone number and room location) from the University’s central directory via an LDAP service and store the retrieved data in a database;

* develop a webpage to allow users to augment data stored within the database with information which is not obtainable via LDAP. For example record the desk an individual occupies in an open plan office, or record that someone has more than one desk, or more than one telephone number;

* implement roles for users (e.g. administrator who can amend all data and user who can only amend their own data);

* write a report to identify which staff and PGR students have not completed their profile in the University’s central directory and then automate a process to encourage them to do so;

* implement functionality to allow for desks within the current floor plan to be moved, removed, or additional desks added;

* develop a mechanism to install revised floor plans so that an administrator can upload a new plan and define where each desk and office is placed;

* be willing to work closely with the technical support team who will ultimately maintain the tool;

* be willing to work closely with the primary end-user of the tool and ensure that the project's progress is explained in an accessible manner to someone without a technical
background;

* be able to cope with requirements which change as the project progresses and adapt if new ideas are belatedly introduced;

* be open to the possibility that it may be decided that it would be preferable to build a new tool rather than evolve the prototype.

Infrastructure requirements and any required staff support other than the project supervisor *

Development space on the server azad.cs.man.ac.uk is required (already agreed with Chris Page).

Hosting space is required for the finished product.

Supervision arrangements throughout the duration of the project (named staff and dates covering the entire duration) *

Uli Sattler will be the student’s supervisor and is responsible for the student; however, the student will also work with Chris Page to ensure that the end product can be supported by Techso plus the student will be expected to work with Tony McDonald to ensure that the tool ultimately meets Tony’s needs.

Location of the project work (building/room) *

Primary location is the student labs but visiting Chris, Uli and Tony’s offices as required.