

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 *

suzanne.m.embury@manchester.ac.uk

Title of the project *

Constructing a Trouble-Shooting Wiki for Software Engineering Tools

Source of funding *

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

Objective of the project *

Our second year software engineering course units ask our students to learn to use a range of modern software engineering tools. Unsurprisingly, when 250+ students are taking their first steps in using these tools at the same time, staff spend a lot of time diagnosing and fixing the same problems, over and over.

The objective of this project is to provide a resource for students that will help them troubleshoot problems with the toolkit in their own time, and to free up staff time for dealing with the more usual problem cases. Through the project, we will create a trouble-shooting wiki, which links the visible symptoms of each problem with a script for getting back on track. The troubleshooter is expected to cover common problems using Git, GitLab, Ant, JUnit, Jenkins and Stendhal. It needs to be complete and ready to go live for our next run of COMP23311, in September 2018.

A secondary objective is to discover good wiki structures for this kind of trouble-shooting resources, for possible application in other course units.

Number of students requested (justify if > 1) *

1

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

Monday, 18th June 2018, Friday, 31st August 2018, 11 weeks

The benefit to the School *

- * Students get an immediate resource for solving common problems, and are more independent and able to self-correct.
 - * Students get quicker responses from staff for problems not covered by the trouble-shooter.
 - * Staff time is saved on dealing with common problems.
 - * Some of the resource (e.g. common Git problems) will be of value to students and staff more widely.
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The benefit to the student *

- * Experience in trouble-shooting a variety of technical issues
 - * Experience in building a resource that will be used almost as soon as the project finishes
 - * Experience in using all the tools covered by the trouble-shooting resource
 - * Advanced media wiki skills
 - * Experience of running a project using agile project management skills
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Skills needed by the student. *

- * Good problem solving skills, especially for debugging and trouble-shooting
 - * Strong information and software design skills
 - * Ability to write clear explanations of technical problems and solutions
 - * Ability to manage work independently
 - * Some experience with some of the tools to be covered by the trouble shooter will be a benefit
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Details of the work that the student would do *

The student will work through the instructions for using the tools, systematically making mistakes and recording the error messages that result. For each error, the student will devise a correction script that leads the user of the trouble-shooter through the process of getting back on track. This might involve adding steps to get extra information to diagnose the problem more precisely.

All this must then be documented in the wiki in a form that allows students to quickly find the symptoms they are experiencing in the list of known problems.

A possible sequence of steps would be:

- * Examine the prototype trouble-shooter developed so far
 - * Design a media-wiki structure that will support the trouble-shooter across all tools:
 - * Populate the trouble-shooter for each tool to be covered:
 - * Use exploratory testing on the tool to identify possible mistakes when using the tool
 - * Document the symptoms of the errors
 - * Develop a script showing how to recover from the error
 - * Add any additional explanations or links to other web resources to help students learn from their mistakes
 - * Towards the end of the project, organise a trial of the trouble-shooter with staff and students in the School
 - * Revise the trouble-shooter in the light of feedback from the trial
 - * Adjust teaching materials to help students find the trouble-shooter when they need it
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Infrastructure requirements and any required staff support other than the project supervisor *

Some support from Chris Page (Media Wiki expert and GitLab administrator) would be a benefit.

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

Supervision will be managed jointly by Suzanne Embury and Gareth Henshall, across the whole period.

Location of the project work (building/room) *

A desk may be available in the eScience lab. Otherwise, the quiet lab can be used.

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