CE0825a Coursework Project

James A Sutherland

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The project accounts for **50%** of the overall module grade. (The other 50% is derived from your weekly task portfolio.)

You must submit **two** files through Blackboard by **23:59 on Monday the 18th of April 2016** (week 13)[1]:

- An self-contained executable JAR file containing your application and its source code.
- Your report, as a PDF or Word (DOC/DOCX) file, containing your project report.

You must also demonstrate your code working during a demonstration slot later in week 13; a signup sheet will be available to select your time during the final lecture and lab session in week 12.

1 Project aim

You have been provided[2] with five bitmap image files which make up a map of the Abertay main buildings, one for each floor. They are labelled, but only in image form so it's not possible to search these files for a room number or name without additional work on your part.

The most basic requirement is to display these five images – or, if you're aiming higher, some better substitute of your own – on the desktop using SWT. It must be possible to run your application and view the floor plan of each level.

Beyond that, you should think of and implement some additional functions to make your map more useful. Some sort of search and/or index function, for example: can I use your map to find room 4506, where the practical

[1] Per Abertay policy, grades should be released 15 working days later, i.e. the end of Monday the 9th of May

[2] http://driesh.abertay.ac.uk/~j204453/

sessions are being held this semester? A list or menu of room numbers which can be clicked to highlight that room on the map would be useful.

Going further, some sort of simple routing or navigation would be impressive: can it, for example, display a route from room 3508 (where the lectures take place) to 4506, going up in the lift or stairs?

Requirements

- Standalone application, *not* just Java source to run from Eclipse
- Containing your source code as well, not just the compiled .class files
- Display the floor plan images (either embedded, or fetched from Driesh online)

Additional features

- Proper menus and/or toolbar: make it look like a real application
- Finding rooms via menu and/or search box
- Additional information, such as room timetables
- Navigation between rooms/floors (hard!)
- Cross platform (Windows x64, Mac OS X, Linux) support

2 Self contained executable JAR files

Creating an executable JAR file was covered in the week 6 lecture, with practice and help in the lab session afterwards. Eclipse creates these for you very easily: if your JAR file doesn't run or isn't created at all, try to figure out why for yourself, or ask for help from staff during a lab session.

Remember, a JAR file is just a ZIP file with a different file extension and some specific special files which tell the Java Runtime Environment how to run it: you can extract and change the contents using almost any ZIP file application. On Windows, the 7-Zip File Manager is good for this purpose.

When you incorporate the SWT library in your JAR file, the results will be platform specific. Your submitted file **must run on 32 bit Windows** (as used on the university machines in room 4506); it's possible to make it run on more than one platform if you're clever (for example, you can create a single JAR file which runs on Mac OS X and both 32 and 64 bit Windows

systems, if you know how, though doing that is beyond the scope of this module).

You must also include the **source code** (the .java files you edit) in this file. If you can't get Eclipse to do that for you, you can add these files later using ZIP file tools. Make sure to test that the JAR file still runs after you make any changes and before submitting it to Blackboard!

3 Project report

Detail your design, development and testing/debug process in this document, with screen shots and other diagrams as you think appropriate.