

PORTFOLIO WEBSITE SPECIFICATION

Project #2: “Company Directory”

PREPARED BY

Paddy Evans

IT CAREER SWITCH

EXECUTIVE SUMMARY

In the first project you were given the opportunity to retrieve data from third party sources and display it in a web app. In this project you will be required to build upon those skills and provide functionality to interact with a back end server database from a mobile or desktop based client that allows for creation, retrieval and modification of company personnel. This branch of functionality is commonly known as CRUD (Create, Read, Update & Delete) and knowing how to implement it is a basic requirement for any commercial full stack developer.

The data is to be presented in a directory that allows for easy searching of staff, departments and locations by single or multiple criteria. As always, this is a mobile first development but it must work equally well on desktop PCs. Careful consideration must be given to the layout and it must achieve the standards of presentation that you expect to find in any other professional app or website that you regularly use.

This project will form the second part of your portfolio that will showcase your talents as a software developer and a solution provider to potential employers. Remember that you are not the only one attempting it and so this is your chance to prove that you can supply a better thought out, better looking and easier to use product than anyone else.

As with the first project, before launching yourself into writing a system to fulfill the system specification, give yourself time to absorb it, research the techniques that you believe are required and decide upon the functionality that you are going to deliver. Once you have done this you will then need to produce a short document for me that outlines this. It should be brief but it should also contain enough detail to convince me that you are on the right lines. Once I am happy that you are you can then begin your final development for IT Career Switch in earnest.

Good luck and please do not hesitate to contact me should you require help, guidance or clarification.

paddy@itcareerswitch.co.uk

1. Project Overview

This document describes the core functionality of the proposed system. After completing the first project you should be more at home with how to approach system design and so there are fewer guidelines in this specification as to how the application is to look and work.

As with the first project, you are not constrained by the contents of the courses and you may employ other frameworks and libraries to achieve the end result. If at any point you wish to talk over your approach or specific design/programming problems then please feel free to contact me and, if necessary, arrange for a telephone call.

2. Minimum skill set

The ability to deploy the following will be required to complete this project. Some of these topics you will have gained a grounding in with Code Academy but you will also need to be able to apply the techniques that you learnt from the extra course work that I have provided you with.

- HTML / CSS (preferably with a framework)
- JavaScript
- JQuery DOM manipulation / AJAX
- PHP with JSON encoding / MySQL or MariaDB

To smooth the process, I have prepared a SQL script that will enable you to create a database containing the tables required to model the company data.

3. Development environment

To prototype and develop solutions locally on your PC and test them before promoting them to the live environment you will have to configure a web server with PHP support on your PC. The following resources cover the three major operating systems:

[Windows](#) [Mac](#) [Ubuntu](#)

However, if you have not done so already then I would strongly recommend that you install VirtualBox and configure virtual machine(s) based on a free linux distro. More information can be found in the document “Configuring a professional development web environment” which was sent to you after you completed the exam.

As this is primarily a development course - and not a software configuration one - we cannot provide extensive support on setting up a web server and so this is one step that you will have to surmount yourself. Either use the guide that I have provided or research other solutions to enable you to complete this step effectively.

You must also set up a link to the live environment along with access to a GitHub repository that contains the code for your solution so that I can review your development and source code as you progress.

4. Minimum functionality

The first portfolio specification was quite a detailed document containing descriptions for almost all of the required functionality. In the real world this won't always be the case and so the functional requirements supplied by your customer are:

“Create a desktop website that can also run on a mobile that allows for the maintenance of a company personnel database to see who's who, who reports to who and where they are”.

That's it.

So this time your response has to be more detailed and imaginative. You will have to sell the idea back to them. If they (i.e. me) like what they hear then they will commission you to write it.

A little unfair? Not really, I faced exactly this many times. The sponsor thinks that the necessary functionality is either too obvious to list, are relying on you to come up with something special or they just can't be bothered; but they are your customer and you have to be.

I'm going to give you a heads up: Look at the functionality of the contacts app on your mobile phone; use it as a starting point and then try to imagine what extra functionality would be required to fulfill the spec. Remember, employees come and go and they also change jobs within and between departments - that should be enough to get you started.

Also, because you work at the company you already know that there are over a hundred employees, multiple layers of management, several departments and five locations.

Take your time to produce a description of the look, feel and functionality that your system will offer. It shouldn't be an essay and it should look professional. You should also identify the framework that you propose deploying along with sample screen layouts. The next section addresses the structure that I would normally expect to see for such a document.

Once I have signed off your response, also known as a User Requirements Specification or URS, I will then issue you with the SQL scripts that will allow you to create a copy of their personnel database so that you can start developing. I will also provide you with sample SQL queries that will demonstrate how to perform sample INSERT, UPDATE, DELETE, LEFT and RIGHT JOINS against the database.

5. Suggested URS format

Good documentation is key to a successful implementation and in the course of your career you will probably spend at least as much time writing it, and talking about it, as you will programming code.

For these reasons, clarity and brevity are your touch stones. That and a commonly understood format so that the document doesn't hold any surprises.

During a twenty one month contract at Unilever's headquarters at Blackfriars I spent a few days working with some British software engineers who were based at Microsoft's headquarters in Redmond. I asked one of them if he had met Bill Gates (he had many times) and the engineer said that when he had presented him with a thirty page document that had taken him weeks to write Bill Gates flipped through it backwards with his thumb. After thirty seconds he handed it back and said "I liked the document overall but I'm not too sure about your conclusion". For sure, he could speed read - a good trick to acquire - but he also knew what to expect from the document's structure and his engineer had stuck to the agreed format.

The following link will provide you with a template for your response. Please use it, stick to it, keep it brief and don't give me any surprises.

You'll need to include some sample screen layouts as well. There are many online wireframing tools available, and whilst I don't wish to endorse any one over the others, the free version of wireframe.cc probably has all that you need - for this exercise at least. Feel free to search out alternatives or just use a free drawing package that can easily define rectangles and position text labels. If you know how to use borders in Excel then that's a pretty handy way to do it too.