**One-Day Sign Off Project**

Shopping Cart

# Introduction

This document details the requirements of your one day project.

You are expected to be able to complete a single vertical slice of functionality, including setting up the database tables in your database account, and putting in the web front end. The front end can either be a JSON/XML Rest Response, or it can be a basic HTML page with minimal styling.

# Expectations

You are expected to demonstrate and prove your ability within the following key areas:

* Test Driven Development
* Clean Code with OOP
* Separation of concerns
* Build a full stack application from scratch

These areas form the basis of your marks. You will be expected to justify any decisions you have made in a follow up interview where you will be asked about this scenario, the code you have written and future code you would write.

# Scenario

***You are to build a sub system that allows a user to add an item to a shopping cart.***

***A list of items should be pre-loaded into the database and hard-coded into your user interface. (To load the items into the database, create and run a .SQL script. These are the items to be displayed in the user interface.)***

***The User picks an item from the given selection and enters a quantity. Your application then displays a success message, or an appropriate message describing why the action failed.***

***An item has an ID, name, description, and price (in your choice of currency), as well as any other relevant data.***

***The shopping cart should be stored on the database. The selected item should end up in the current user’s shopping cart.***

***Your application needs to check if the item is available for purchase in the given quantity. If the above is valid, your application needs to return a page with a message that the item has been added to the shopping cart, whilst updating the cart contents on the database. If any of the checks fail, application needs to return a page with an appropriate message.***

# Frameworks

You have the freedom to choose whichever frameworks you like, but you will be asked to justify your choice in the follow up interview. Remember to make sure that the application is easily scalable.

# Required Deliverables

You are expected to submit the following:

* Your code solution:
  + ***Display all items available for sale to the user***
  + ***Allow the user to choose an item and quantity from the selection***
  + ***Display a page which either confirms the action taken or shows an error message***
* All diagrams:
  + An ERD diagram of the database
  + A basic class diagram of the code solution
  + Use case diagram
* A breakdown of tasks required to complete this project
* Make sure you include sufficient test data in your database and have a .SQL script to create and populate the database

**The project must be pushed to your Git repository under the name “OneDayProject-ShoppingCart” by 5.30pm.**

# Standards

* Application of TDD
* Test coverage > 65%. Test your DAO classes but do not test your POJOs.
* Provide meaningful tests. For each test, what are you testing for?
* Improve your test coverage by including Boundary Value Testing
* From use case diagrams, create test cases and from there develop your code
* Do not use SELECT \* in any of your SQL queries if using SQL