

SESSION: 2023/24 DIET: 1

# Web Application Development 2

M3I325640

M3I326794

Coursework Specification for Web-based Practical Coursework

This coursework contributes 70% to the overall module mark.

# LEVEL: 3

# MODULE LEADER: Fiona Fairlie

## Submission dates: Week 12

Web Application Development 2 is assessed by coursework. This document outlines the requirements for the practical part of the coursework. It requires you to develop a website and associated documentation. This coursework is worth 70% of the overall module mark.

There is also another coursework which consists of a written report and which is worth 30% of the module. Details of the requirements for that coursework are given in a separate document.

## WAD2 Practical coursework: Development of a application to reduce food waste

The cost of living crisis has caused a surge in the number of people experiencing food insecurity. The Scottish Pantry Network (TSPN) work with local food pantries to help people in this situation. Food pantries are located in local communities and provide members with heavily discounted food.

TSNP is aware that Glasgow City Council has recently been providing grants for small local organisations to grow food in locations such as community gardens and schools across the city.

They want to develop a web application to connect people who have surplus fruit and vegetables that they have grown (whether as part of this initiative or otherwise) with pantries in the same area who would benefit from that food. It plans to pilot the system in Glasgow.

It envisages that the application would allow people with food to share to register with the system. Once registered they would be able to log in, post details of the food they want to share and how long it is good for. People donating food would then be asked to take it to a local drop off point.

Items should only be displayed to end users while the food is “within date” and available at the drop off point. Once an item passes its use by date it should no longer be displayed.

Pantries should be able to view food items and select items they want. Once an item has been selected it should no longer be displayed.

The organisation wants the system to work work automatically without the need for constant intervention but recognises that it would be useful to have a contact us facility to allow users to provide feedback and a facility to allow administrators to monitor the site and remove users who make inappropriate or inaccurate posts.

The application should allow the users to do the following:

* People should be able to view an About Us page with information about the initiative and access a Contact Us page with a contact form
* Individuals with food to donate should be able to register for the application
* Registered users should be able to login and add items
* Pantries should be able to browse to the site and view currently available items
* Pantries should be able to select items
* Items should only be displayed while they are within date and usable
* Items should not be displayed once they have been selected
* There should be an administrator role provided. Administrators should be able to add and delete users and items.

You may choose to add additional, relevant features which are not specified above. If your application extends the specification you should highlight and justify the additional features in your final submission.

The application should be developed using Node.js and Express with NeDB used to store information. It is expected that Mustache templates will be used, however another approach to developing the user interface would be acceptable if appropriate, if agreed with the module leader and if justification is provided.

## Submission

You are required to submit

* wireframes showing the layout and content of each page. You may also include sample visuals showing the ‘look and feel’ of the site.
* data structure: a description of the data structure that will be used to store information in the database.
* the website including
  + the code for your site
  + a short readme file detailing how to run the site
    - a list of features that have been implemented

to CodeGrade on GCULearn as either a .zip file or a link to a GitHub repository.

* a test report including
  + a list of features that have been implemented
  + a list of tests along with their results see appendix A for a possible format.
* either
  + a link to a live version of your site

or, if this is not possible,

* + a video demonstrating the website in use and explaining the features. This should be submitted via Planet eStream on GCULearn.

Details of how to use CodeGrade and Planet eStream are available on GCULearn. Please make sure you read the documentation carefully before submitting.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **1st** | | | | | **2.1** | **2.2** | | **3rd** |  | | |
|  | **Exceptional** | | | **Excellent** | | **Very Good** | **Good** | | **Satisfactory** | **Marginal Fail** | | **Clear Fail** |
|  | **90 - 100** | | **80 - 89** | **70 – 79** | | **60-69** | **50-59** | | **40-49** | **30 -39** | | **< 30** |
| **Website** | |  | | |  | | |  | | | 90% of Coursework 2 mark | |
|  | Demonstrates ***exceptional*** or ***consistently excellent*** ability, skills and behaviours across specified characteristic(s) with ***no weaknesses***. | | Demonstrates ***exceptional*** or ***consistently excellent*** ability, skills and behaviours across specified characteristic(s), with ***few weaknesses***. | Demonstrates ***mostly excellent*** ability, skills and behaviours across specified characteristics. | | Demonstrates ***overall very good*** ability, skills and behaviours across specified characteristics. | Demonstrates ***overall good*** ability, skills and behaviours across specified characteristics | | Demonstrates ***overall satisfactory*** ability, skills and behaviours across specified characteristics | Demonstrates ***overall poor*** ability, skills and behaviours across specified characteristics with ***some satisfactory*** elements | | Demonstrates ***overall poor*** ability, skills and behaviours across specified characteristics with ***no satisfactory*** elements |
| **Website** 90% of Coursework 2 mark | | | | | | | | | | | | |
| **Site structure**  **10%** | Excellent site structure.  Appropriate, maintainable, extensible, comprehensive response to brief with relevant additional functionality successfully implemented within schedule. | | Well structured, appropriate, maintainable, extensible structure which provides a comprehensive response to the brief successfully implemented. | Well-structured site which provides a comprehensive response to the brief successfully implemented. | | Appropriately structured site implemented | Site structure addresses most of the requirements but may have occasional omissions. | | Demonstrates some technical understanding but site structure does not fully meet the requirements specification | Some relevant information displayed but site does not meet the requirements. | | Site does not address the specification. |
| **Controllers (including routes)**  **20%** | Excellent. Elegantly structured set of routes with corresponding controllers  which provide an excellent response to the brief and include appropriate relevant additional features successfully implemented. Code is of a professional standard- clean, elegant and well structured; clearly commented and easy to read; variables are appropriately named etc | | Well considered set of routes with corresponding controllers which provide an excellent response to the brief successfully implemented using well structured, clearly commented code. | Well considered set of routes with corresponding controllers used to implement a comprehensive response to the brief. | | Correct dependencies installed.  Server implemented successfully.  Sensible set of routes with corresponding controllers provided. | Correct dependencies installed.  Server implemented successfully.  Simple site with a number of pages implemented but some expected functionality missing or code is poorly structured. | | Basic server functionality implemented and page served  Some routes successfully implemented but there are significant omissions and code is poorly structured. | Some flaws in a straightforward attempt. | | Routes not successfully implemented. |
| **Models**  **20%** | Excellent well-structured and well documented code along with outstanding use of database technologies used to provide a comprehensive set of utilities to maintain and updated the system. | | Excellent use of well-structured database to create, store, update and delete data.  Items displayed depending on relevant criteria e.g. useBy date.  Appropriate information displayed to different user groups.  Ability to update item status.  Code is clear and well structured | Well-structured database and code used to provide a comprehensive set of utilities to maintain the system including the ability to display relevant items to different user groups and the ability to update item status. | | |  |  | | --- | --- | | Database successfully integrated.  Code to create, store retrieve and delete data from database implemented. | Well-structured database and code used to provide a comprehensive set of utilities | | Database used to store and retrieve appropriate information. | | Basic integration of database implemented. | Some attempt to integrate a database | | No attempt to integrate a database. |
| **Views**  **20%** | Outstanding response. Superb. design.  Appropriate and attractive  dynamic interfaces provided using appropriate technologies.  Complete and comprehensive response to brief. | | Excellent response.  Complete and comprehensive response. Appropriate and attractive  dynamic interfaces provided using appropriate technologies. | An appropriate and comprehensive response using appropriate technologies supplied.  Neat, consistent and attractive page layout. | | An appropriate set of pages successfully displayed. Structures such as lists, inverse lists etc used to display some dynamic content.  Neat, consistent page layout. | A range of pages displaying relevant materials displayed using appropriate templates. | | Most required information displayed using basic template or other relevant technology used. | Some relevant information displayed.  Limited attempt to use templates. | | No templates used. |
| **Authentication**  **20%** | Excellent range of appropriate authentication strategies which provide an outstanding user experience implemented successfully.  Different levels of access provided for different categories of user. | | Appropriate authentication strategy implemented successfully.  Evidence of consideration of user experience.  Different levels of access provided for different categories of user. | Appropriate authentication strategy implemented successfully.  Different levels of access provided for different categories of user. | | Straightforward authentication strategy including the ability for new users to register implemented. | Basic login/logout authentication implemented successfully. | | Some attempt to provide basic login authentication. | Flaws in a basic attempt to provide authentication. | | No attempt to provide authentication. |
| **Test Report** | |  | | |  | | |  | | | 5% of Coursework 2 mark | |
| **Testing**  **5%** | Excellent set of tests which provide complete coverage including atypical input and edge cases. Full test history provided demonstrating the process of developing a fully functional site. Excellent appraisal of results. | | Excellent set of tests which provide high levels of coverage and include atypical test cases.  Full test history provided.  Demonstrates that site meets specification.  Excellent appraisal of results. | Test provide a high level of coverage.  Excellent summary and discussion of test results. | | Tests cover all required functionality. Good summary of test results. | Tests cover most of the functionality.  Some consideration of results. | | Limited number of test cases considered. | Insufficient test cases considered | | No test reports provided or test result are inaccurate. |
| **Deployment** | |  | | |  | | |  | | | 5% of Coursework 2 mark | |
| **Distribution & deployment**  **5%** | Site which fully meets brief deployed successfully.  Well-structured code submitted via remote repo with clearly written readme file, well documented commit history etc available. | | Fully functioning site deployed successfully. OR  Well-structured code available via remote repo and excellent video demonstration provided | Site deployed successfully  OR clear, comprehensive video demonstration provided  . | | Site deployed OR clear video demonstration provided | Screen capture video of site running correctly on local machine is provided. | | No attempt to deploy site but some video evidence of site running locally is provided. | Some video evidence of incomplete site provided | | No attempt to deploy site or to provide a screen capture video of the site in operation. |

# Appendix A

In the context of this coursework the main testing expected will be at systems level.

Systems tests check the integrated system in order to evaluate its compliance with the specified requirements.

**Fictional Sample Test Section for System Tests (based on a login example):**

**Test Scope**  
Functional Testing was carried out for the following modules:

1. **Landing page (index.html)**
2. **Login**
3. **Sending messages**

**Test Cases**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test ID** | **Action** | **Expected outcome** | **Status** | **Evidence** |
| **1.1** | **localhost:9000** | **Landing page loads** | OK |  |
| **1.2** | **localhost:9000/index.html** | **Landing page loads** | OK |  |
| **1.3** | **Click “Send a message” (user not logged in)** | **Login page loads** | OK |  |
| **1.4** | **Click “Send a message” (user logged in)** | **Message page loads for this user** | OK |  |
| **2.1** | **Provide username and password for registered user and click Login button** | **Message page loads for this user** | OK |  |
| **…** |  |  |  |  |

**Summary test results**

The functionality of the landing page works as expected. All test results are as expected.

Most of the functionality of the login page (11 out of 12 tests) works as expected. The remaining issue is that when a non-registered user uses the login button (instead of the register button) the user is directed back to the login page but no error message is shown. …