TheJavaScript

Final Marked Assignment (FMA)

Introduction

The FMA carries 75% of the total marks for this module. It is designed to test all of the skills and knowledge you have developed throughout the module. The FMA has **four parts**:

- **Part 1** focuses on DOM scripting methods.
- **Part 2** focuses on JQuery.
- **Part 3** focuses on web standards compliance.
- **Part 4** asks you to write a short comparison of the relative merits of traditional JavaScript coding versus JQuery coding.

You must complete each of the four parts to the assignment. Read the instructions for each part carefully until you understand exactly what you are being asked to do.

FMA Overview

The FMA requires you to build a small JavaScript web application, and a contact form based on the following scenario.

The Zedland Health Authority are concerned about the rise in diabetes in their country. To help indenify potential sufferers, they want to develop an online tool which will assess an individual's risk of developing the disease, and give him/her advice based on their level of risk. If an individual's risk is identified as being high, individuals will be given the option of contacting the Zedland Health Authority by submitting their details via an online contact form.

Part 1 – DOM Scripting using JavaScript (70%)

The Diabetes Risk Assessment Tool

The diabetes assessment tool will ask users four questions in order to ascertain their risk level for developing diabetes. Each question will have four possible answers (e.g. they are multiple-choice questions). Each answer will carry a numerical value, the total of which will be used to determine an individual's risk level. Questions, answers and numerical values are detailed in table 1 below.

Question	Possible Answers	Numerical value
How old are you?	1-25	0
	26-40	5
	41-60	8
	60+	10
What is your BMI?	0-25	0
	26-30	0
	31-35	9
	35+	10
Does anybody in your family have diabetes?	No.	0
	Grandparent	7
	Sibling	15
	Parent	15
How would you describe your diet?	Low sugar	0
	Normal sugar	0
	Quite high sugar?	7
	High sugar	10

Table 1.

For the application, the questions should be implemented using radio buttons to ensure that a user can select only one of the four possible answers for each question (figure 1).

Note that the lowest score for each question should be pre-checked upon the application loading. This removes the need for the display of error messages should the user fail to click an option from any of the groups.

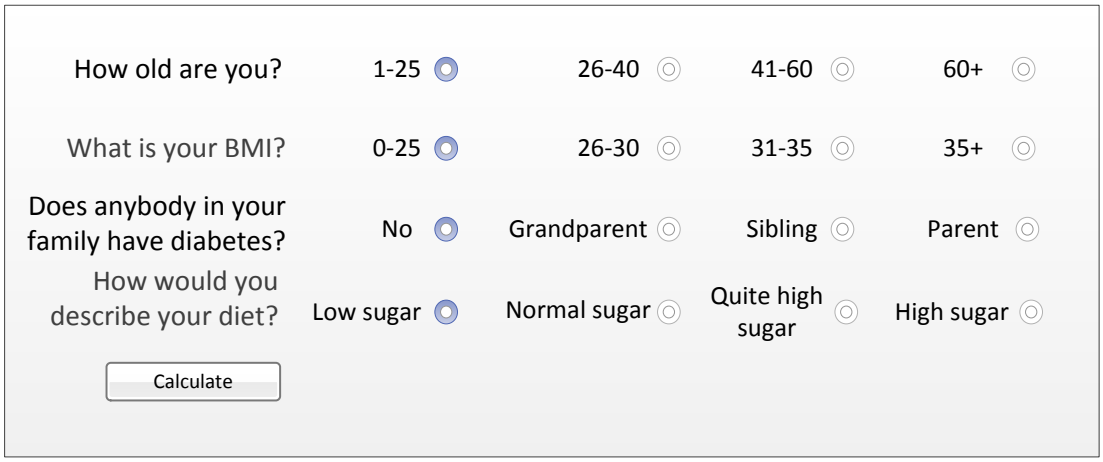

Figure 1.

Once a user has selected his/her answers, clicking the *calculate* button (figure 1) should calculate the risk level (as a numeric value), and display a message based on the level of risk determined by the program. Risk factors, numerical indicators and associated messages are detailed below in table 2.

Risk factor	Score	Message
Low risk	0-15	Your results show that you currently have a low risk of developing diabetes. However, it is important that you maintain a healthy lifestyle in terms of diet and exercise.
Medium risk	16-25	Your results show that you currently have a medium risk of developing diabetes. For more information on your risk factors, and what to do about them, please visit our diabetes advice website at http://www.zha.org.zd.
High risk	>25	Your results show that you currently have a HIGH risk of developing diabetes. [*Your main risk factors are your BMI and your diet*.] We advise that you contact the Health Authority to discuss your risk factors as soon as you can. Please fill in our contact form and a member of the Health Authority Diabetes Team will be in contact with you.

Table 2.

Messages should be displayed in a previously hidden panel just below the application interface (figure 2).

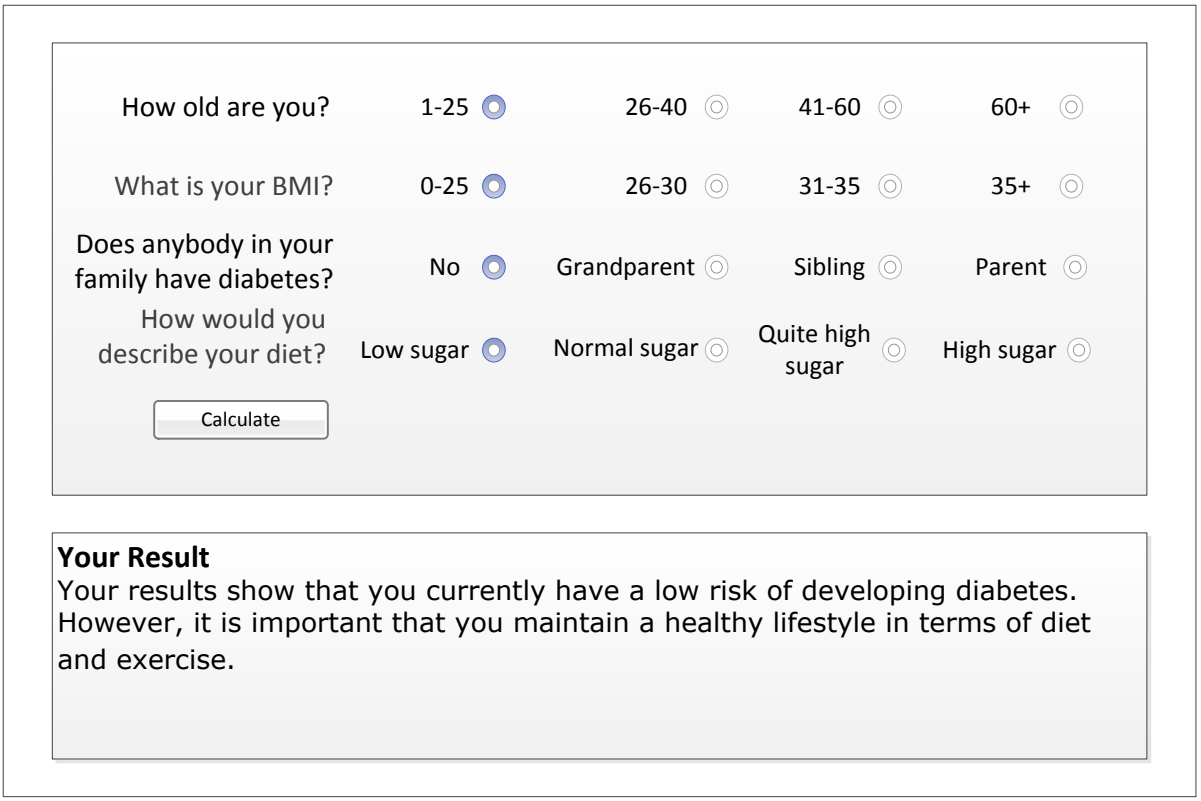

Figure 2.

Where a user is determined to be high risk, then the message displayed should contain reference to all those risk factors for which he or she has scored >=10. For example, if an individual scores 10 for Q2 and 10 for Q4, the message paragraph displayed in the screen would contain the following sentence:

*. . . Your main risk factors are your **BMI** and your **diet** . . .*

The Form

If a user is assessed as being high risk, then they are prompted via the risk message they receive to contact the Zedland Health Authority by means of a contact form. The form in question should be on a second HTML page. It should have the following fields and controls.

Field	Control	Mandatory
First Name	Text	Yes
Last Name	Text	Yes
Title	Select (Mr. Ms. Mrs, Miss. Master).	Yes
Health Authority Number	Text	Yes
Email	Text	Yes
Telephone Number	Text	No
Submit Button	Submit	NA

Table 3.

Before submitting the form, it should be validated on the following criteria.

1) All mandatory fields have been completed.
2) The name fields have more than one character, and do not contain numbers or other non-allowed alphabetic characters. The only character the last name field should legitimately contain is a hyphen (e.g. Whittaker-Jones).
3) A valid email has been entered.
4) A valid Zedland Health Authority Number has been entered. Zedland Health Authority numbers are in the form of a six-digit integer prefixed with the letters *ZHA* (e.g. ZHA346783).
5) If a telephone number is entered, then it should contain only numbers, not letters, or other disallowed characters. A valid Zedland telephone number has 11 digits (no spaces), the same as a UK telephone number.

If a field has not been entered, or not been entered correctly, then the user should receive a meaningful error message next to the relevant field (e.g. figure 3).

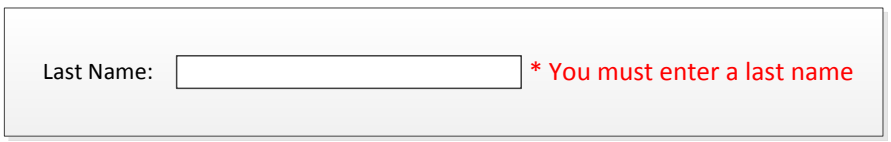

Figure 3

In building the form, extra marks will be awarded for the following enhancements:

1) Setting the focus to the *First Name* field when the page loads.
2) Setting default text for at least one control (e.g. figure 4).

Figure 4.

3) Automatically removing a field's default text when a user tabs to or clicks into the field, and replacing the default text, should the user tab out of the field without completing it.
4) A Tooltip next to the Health Authority Number field (figure 5).

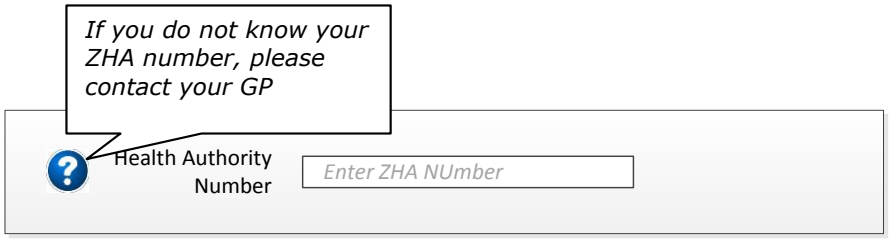

Figure 5.

Please reference any third party code sources you have used (books, websites, etc.), as a comment in your JavaScript file.

Note that all validation and form enhancements must be done using JavaScript and not HTML 5. No marks will be awarded for anything other than JavaScript solutions.

Part 2 – JQuery (15%)

The second part of the assignment requires you build exactly the same contact form that you built for Part 1, but this time using the JQuery form validation plugin (http://jqueryvalidation.org).

** You are NOT required to build the Diabetes Risk Assessment Tool in JQuery: only the contact form.

Please reference any third party code sources you have used (books, websites, etc.), as a comment in your JavaScript file.

Part 3 – Standards Compliance (5%)

You will be awarded marks for web standards compliance. To achieve standards

compliance, all your HTML pages must validate as HTML 5, and there must be a clear separation between the structural, presentation and functional layers of your applications.

You will not be marked on your web design skills. However, please endeavour to make your pages, forms, etc. as presentable and readable as possible.

Part 4 – Comparison of JavaScript and JQuery (10%)

Part 4 requires you to write a short (500-word) comparison of the relative merits of traditional JavaScript Coding versus JQuery coding. Please use your own experience of using JavaScript and JQuery to complete this assignment to inform your comparison.

Deliverables for Assessment

FMA Documentation

The completed FMA documentation must be submitted electronically in a .zip archive (*username_jv_FMA.zip*) in the assignment dropbox in Moodle BEFORE the stated FMA deadline for your class. Do NOT submit your FMA in other compressed formats (e.g. .rar).

The *username_jv_FMA.zip* archive should contain the following folders and files:

username_jv_fma_part1 (folder)
- diabetestool.html
- contactform.html
- diabetestool.js
- contactform.js
- diabetestool.css
- Any image files that you have used in the application.

username_jv_fma_part2 (folder)
- contactform_jq.html
- contactform_jq.js
- contactform_jq.css
- Any image files that you have used in the application

(You may also include the JQuery Library file in you submission. Alternatively, you can link to the JQuery Library at:

<script src="//ajax.googleapis.com/ajax/libs/jquery/1.10.2/jquery.min.js"></script>

username_jv_fma_evaluation (folder)
- jv_jq_evaluation.doc

Note: If a required file is not submitted, the examiners will not search for missing files and 0% will be awarded for any missing components.

Completing the FMA

The FMA must be completed and submitted electronically in the assignment dropbox in Moodle BEFORE the FMA deadline for your class.

Begin your work early, as the FMA is a substantial task that requires planning and effort to complete satisfactorily.

Getting support

Support for the FMA work will be available from your tutor until two weeks before the assignment deadline.

Getting feedback

The FMA well be marked by your tutor and then second marked by another tutor. This process can take up to eight weeks. Once all the required marking and second marking has been completed, your grade and your feedback will be uploaded to Moodle.

Backing up files

Always keep a back-up copy of all work submitted for assessment in case of unforeseen submission problems.

Plagiarism

Plagiarism, which is claiming the work of others as your own, is a serious offence and can result in your exclusion from all colleges of the University of London. You should be aware that we use a range of automated tools to spot potential plagiarism in spreadsheets, databases, programme code and text documents. Providing you clearly reference work done by others that you have included in your FMA you will not be penalised.

In the course of completing the assignment, we acknowledge that you will research code from books and from online sources. *Ideas* and *techniques* from these sources may be used in the completion of your own work. HOWEVER, your own work MUST differ significantly from any third-party sources. If it does not, this will constitute plagiarism. You must also clearly reference any third-party sources you have used.

Likewise, we acknowledge that some students will work together collaboratively to solve problems. Again, if you do this, each student's final submission must be markedly different. If your work is not markedly different from another student's work, again, this will consitute plagiarism.