**VICTORIA UNIVERSITY**
**OF WELLINGTON**
**Te Whare Wananga o te Upoko**
**o te Ika a Maui**

**School of Information Management (SIM)**
*Te Kura Whakaipurangi Korero*

INFO102
Assignment 1
Trimester 2 2014

# *SweetAs Calorie Calculator*

**Due Date**
Friday 15th August at 10pm

**Demonstration Dates**
Wednesday 20th, Thursday 21st, and Friday 22nd August - in your workshop session following the submission date

**Percentage of course mark**
15% (12% for the website; 3% for the demonstration)

## Overview

Your best buddy and you have setup your own software development company in Wellington. Your first software development project is from SweetAs Healthcare, a healthcare company that among other services, provides consultation to clients on nutrition, and how to maintain a healthy diet. SweetAs wishes to improve their existing website by developing a calorie calculator application. The calorie calculator will be used by the readers of their website. The purpose of the calorie calculator is for the readers to calculate their Basal Metabolic Rate (BMR), advice readers on their suggested daily calorie intake, and alert readers if they have gained, lost, or maintained their weight based on the calories that they had consumed in a day.

You have been asked to design a prototype of the calorie calculator which will be used as a demo website when the SweetAs Healthcare marketing team present the website to their Board of Directors for approval. Because this is a prototype, or mock-up, of the website, it will not be fully functional. Instead, it should provide a reasonably realistic view of the information and services that will be available in the final version of the website. As such, information (text and images) already existing on the web may be used (copied or linked to), and some functionalities may be simulated, not implemented.

*NOTE: During the workshop session following the assignment deadline, you will have to make a short **demonstration** of your assignment to a tutor. They will ask you both theoretical and practical questions about the assignment, and they will request that you explain particular pieces of code. Your tutor will also mark your assignment during the demonstration.*

 

## Notes

- Read the whole assignment before you begin.
- When you receive this assignment, you will find that you are not familiar with some of the programming concepts required to create the web site. However, as the lectures and workshops progress, the main concepts will be covered. Therefore, it is very important that you attend the lectures and workshops as well as work in your own time to complete this assignment.
- You are strongly encouraged to participate actively in the Blackboard discussion forum dedicated to the assignment. Ask as many questions as you want but also answer any question to which you know the answer. Remember, there are no stupid questions.
- I advise you to consider how the marks are allocated when developing your prototype web site. Ensure you put the most effort into those portions with the maximum marks. That is, do not spend too much time on "look and feel", but focus on getting the functionality working.

## Learning Objectives

In this assignment, you will show an understanding of the following.

- Use of Microsoft Visual Studio 2012 (for Web)
- Design of a simple website (only one page)
- Use of controls including, labels, buttons, HTML tables, textboxes, dropdown lists, radio button list, hyperlinks
- Event handling
- Use of basic C# programming concepts

## Warnings

1. You must write your code in Microsoft Visual Studio 2012 using C#. Code written in other versions of Visual Studio using C# will not be marked.
2. Occasionally the look of the interface you develop in Microsoft Visual Studio Express 2012 for Web at home might look slightly different in the version of Visual Studio installed in the SIM labs. Therefore, before you submit your final version, we recommend that you open your web site in the SIM lab, check it and make any adjustments. The functionality (programming code) will not be affected, only the interface layout.
3. You are responsible for backing up your own work.
4. Helping and collaborating with others is encouraged, but plagiarism is not accepted. **Helping and collaborating are not synonymous with copying somebody's work**. Please read the course outline for guidelines on the University plagiarism policy.

## Submission Instructions

1. Follow the instructions provided in Workshop 1. First, zip your website folder, and then upload it in the appropriate assignment section on Blackboard.
2. Files submitted with a .rar, or a .sln extension cannot be marked.
3. Name your zip file as follows:

   **Surname_StudentID_A1.zip (e.g. Kanaparan_3000123456_A1.zip)**
4. You can upload your assignment multiple times before the submission deadline, which is one way of temporarily storing a backup of your assignment. Only the final submission will be marked.
5. The submission system closes at 10pm on the due date. We strongly advise you to submit your work one or two hours before this time.

 

## Requirements

Your client has specified the following requirements for a prototype website for their calorie calculator. Their calorie calculator will be named SweetAs Calorie Calculator. They have requested a prototype website consisting of a single web page. The webpage will allow readers of their website to:

1. Understand the overall purpose of the calorie calculator by reading a single paragraph of text
2. Link to additional information about health and nutrition provided on the web (provide a single link only)
3. Calculate and display the Basal Metabolic Rate (BMR).
    a. The reader will need to enter their name, age, height (in cm), weight (in kg), select their gender, and select their level of daily exercise
    b. The formula to calculate the BMR is as follows:
    **Women**: BMR = 655 + (9.6 x weight in kilos) + (1.8 x height in cm) - (4.7 x age in years)
    **Men**: BMR = 66 + (13.7 x weight in kilos) + (5 x height in cm) - (6.8 x age in years)
4. Once the BMR has been calculated, the reader's suggested daily calorie needs will need to be calculated and displayed. The suggested daily calorie needs is based on the level of daily exercise of the reader. To determine their daily calorie needs, take the BMR, multiply it by the appropriate number below (based on the reader's activity level), and add that to the BMR.
    - **No activity**: Multiply BMR by 20%
    - **Light Activity**: Multiply BMR by 30%
    - **Moderate Activity**: Multiply BMR by 40%
    - **Strong Activity**: Multiply BMR by 50%
    - **Intense Activity**: Multiply BMR by 60%
5. Enter how many calories the reader consumed for the day
6. Based on the difference between the calories consumed and the daily calorie needs, the calories calculator will then need to:
    a. advise the reader how much weight he/she has lost, gained, or maintained on that day. The formula to calculate weight gain or loss is as follows:
    1kg is measured by 7,700 calories
    b. display an appropriate image that would show if the reader has lost, gained, or maintained his/her weight on that day.

    ***Here's an example:***
    *Say that the reader's BMR is 1,790. Let's also say that the reader is moderately active. 1,790 x 0.40 = 716. Add 716 to 1,790 to get 2,506. That's what the reader needs to stay under in order to lose weight. Any calories consumed above 2,506 means that the reader is gaining weight. Assume that the reader consumed 5,000 calories on that day. This means that the reader has consumed 2,494 calories more than the suggested daily calorie need. This could also mean that the reader may have gained (2,494 / 7,700)calories x 1kg = 0.32kg of weight.*
7. Understand the purpose of the data entry fields by viewing a relevant message (provided using a tooltip).
8. Clear the web page of all input data and reset the web page to its initial state.
9. Get information to contact a SweetAs Healthcare consultant. The information should contain the name of the consultant, physical address, telephone number, and an e-mail address.

 

## Specifications

The web site prototype must consist of ONE webpage (Web Form) created using Microsoft Visual Studio 2012 for Web, ASP.NET, and the C# language.

**Page design**

1. Follow common best practice regarding web page layout: heading with logo or graphic, main contents in the middle, and footer with generic information (author, copyright, etc.). You are free to reuse whatever logo, text, or images you find on the web or in this assignment.
2. You can also define the colour scheme, font style, and overall appearance of the website as long as it looks professional and follows the basic guidelines for good web page layout and design.
3. Name the website *CalorieCalculator* by setting the Title property of the Document page to *CalorieCalculator* so that the browser displays *CalorieCalculator* instead of localhost.

**Calculating Calories**

The page will calculate the BMR, suggested daily calorie intake, and the weight lost, gained, or maintained. The simplest way to do this is to put all of the following functions in one cell of the HTML table you have used to format your page.

1. Provide the controls needed to calculate the BMR.
2. Provide a set of radio buttons so that the reader can select their activity level.
3. Provide a textbox so that the reader can enter the calories consumed for the day.
4. Provide a button (ONLY ONE) that will calculate and display the following:
    a. the BMR.
    b. the suggested daily calorie intake.
    c. the weight lost, gained, or maintained. Round the results to 2 decimal places.
    d. an image that would reflect the outcome of: gained weight, lost weight, or maintained weight.

**Clearing the form**

1. Provide a button that clears all the textboxes, the radio buttons, the label text, and the weight image.

**Conventions**

1. Name all program elements including variables, constants, and controls according to proper naming conventions. Code layout, indentation, and comments should follow good code quality practices. Remove empty events from the code.
2. Name the website's single page "Default.aspx."

**Providing help**

1. Use tooltips so that when the user hover their mouse cursor on a control, a tooltip message provides them with useful information about the purpose of the control.
2. Provide a link to additional information about health and nutrition on the web.

**Contact Information**

1. Provide the contact details for a healthcare consultant at SweetAs Healthcare.

## A Strategy for Proceeding

1. Sketch your webpage design on an A4 piece of paper. This is your "paper prototype." Show the positions of all headings, text, images, and other elements. Draw all the controls such as buttons, dropdown lists, labels, textboxes, HTML tables, or any other controls you choose to use. Write out the name of these controls following the naming conventions discussed in the lectures. Write out the names and properties of labels and variables you will use.
2. Write on paper, the code for the instructions associated with the button that calculates the calories. Use meaningful variable and control names.

 

3. Only create the webpage in Microsoft Visual Studio 2012 for Web when your paper prototype is reasonably complete.
4. In developing the web site, first create the scaffolding (headings, tables, and footer). Name the labels, variables, and controls on your web page according to your paper prototype. Test your website.
5. Add appropriate text and images. Test your website.
6. Develop the BMR section of the web page. Add the necessary text and controls. Test your website.
7. Add a Calculate button. Test your website.
8. Write the code to calculate and display the BMR. Test your website.
9. Add the necessary text and controls for the user to select their daily activity level.
10. Write the code to calculate and display the suggested daily calories intake. Test your website.
11. Add the necessary text and controls for the reader to enter the calories consumed for the day.
12. Write the code to calculate and display how much weight the user has gained, lost, or has maintained. Test your website.
13. Write the code to display an appropriate image to reflect the outcome of gained weight, lost weight, or maintained weight. Test your website
14. Add the tooltips to the appropriate controls. Test your website.
15. Add a button to clear the controls on your website. Test your website.
16. Provide a link to an external website. Test your website.
17. Check the requirements, the specifications, and the marking guide to ensure you have implemented all of the functions required in this assignment.

**A good tip is to compile your code frequently and fix the problems that occur before you proceed from step to step. In general, we recommend you to compile and run the code each time you have done a change, even a minor one.**

 

| Marking Guide – Web site | | | |
|---|---|---|---|
| | **Requirement** | **Total mark** | **Student mark** |
| 1 | **Website design meets requirements**<br>• Professional appearance and appropriate sections (header, middle, footer)<br>• Readability<br>• Consistent layout<br>• Page navigation<br>• Text and images as requested (including purpose, contact information)<br>• Section for counting calories laid out logically<br>• Appropriate controls and properties (including buttons, textboxes, dropdown lists, labels, radio buttons)<br>• Use of HTML table | 2 | |
| 2 | **Functionality**<br>• Correctly use of control (2)<br>• Name of website changed (0.5)<br>• Link control (0.5)<br>• BMR calculated correctly (1)<br>• Suggested daily calories intake calculated correctly (1)<br>• Weight gained, lost or maintained calculated correctly (1)<br>• Weight image displayed correctly (1)<br>• Clear form (1) | 8 | |
| 3 | **User assistance**<br>• Tooltips | 0.5 | |
| 4 | **Conventions**<br>• Appropriate comments provided<br>• Naming standards followed in controls, and code<br>• Code layout consistent<br>• No empty events | 1 | |
| 5 | **Execution**<br>• Code executes on start-up | 0.5 | |
| | **TOTAL** | 12 | |

| Marking Guide - Demonstration | | | |
|---|---|---|---|
| | **Requirement** | **Total mark** | **Student mark** |
| 1 | **Theory question (verbal)**<br>You are required to answer **one** of the following questions asked by a tutor.<br>1. Indicate one control on your web page. State what type of control this is.<br>2. Why is it important to give a variable a meaningful name?<br>3. Name one identifier in your code that could be declared as a constant?<br>4. What is the data type of data displayed in a textbox?<br>5. Describe one improvement that would make your website more functional (i.e. that would make it more useful for the end user). | 1 | |
| 2 | **Practical question (verbal)**<br>E.g., "What does that line of code do?" The tutor selects the line of code. Only lines of code you have written are selected | 2 | |
| | **TOTAL** | 3 | |

 