Assignment 3: Forms and the DOM

Unit: DGTL11006 Coding Fundamentals, 2018 Term 2

Due date: 9:00 pm AEST, Friday of Week 12

Weighting: 40%

Objectives

This assignment relates to unit learning outcomes 1, 2, 3, 4 and 5, as stated in the unit profile.

Task

You are required to build a web page for a fictitious travel agency that helps users calculate the cost of a tour to the United States. The web page must be implemented using HTML5 and JavaScript code. You must write all of the code yourself. Your web page must not contain any automatically-generated JavaScript code such as the JavaScript behaviours available within Dreamweaver. You are also required to write a report about your work.

To simplify development and marking, the appearance of the web page must match the example shown below. Don't try to enhance the appearance of the page or add extra elements to it. CSS code is not required. Visual appeal is not part of the assessment criteria for this assignment. The border around the screenshot below is not part of the web page.

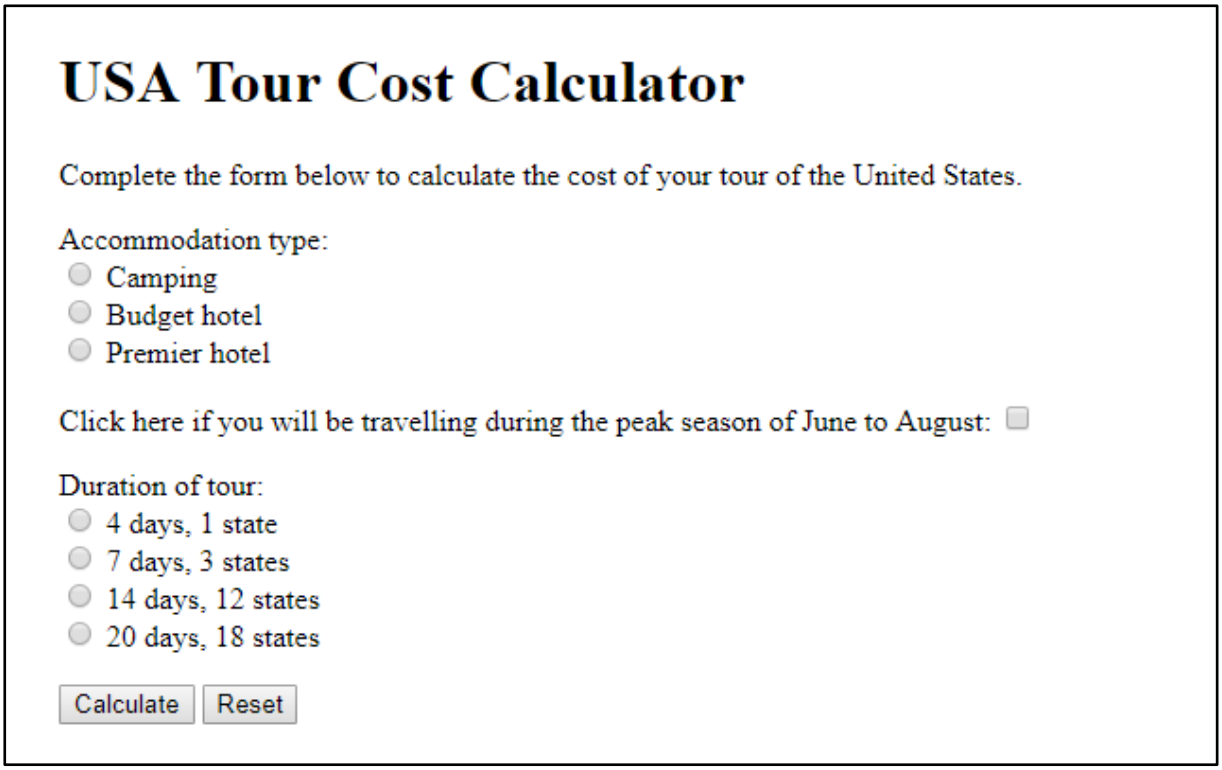

Figure 3-1: Screenshot of assignment solution

The page contains the following elements:

- a heading;
- a paragraph of instructions;

- a group of three radio buttons for the accommodation type labelled 'Camping', 'Budget hotel' and 'Premier hotel';
- a checkbox labelled 'Click here if you will be travelling during the peak season of June to August';
- a group of four radio buttons for the duration of the tour labelled '4 days, 1 state', '7 days, 3 states', '14 days, 12 states', '20 days, 18 states',
- a submit button labelled 'Calculate'; and
- a reset button labelled 'Reset'.

The HTML form prompts users to select their accommodation type, whether they will be travelling during the peak season of June to August, and the duration of their tour. When the user supplies the requested input and clicks the Calculate button, the script calculates the total cost of the tour and displays the answer in an alert box. The alert box should say ‘The total cost of your tour is $...’.

The cost that is displayed should be rounded to the nearest dollar (integer). It should not be displayed as a floating-point number.

If the user clicks the Reset button all form fields should be cleared. When the Web page is first loaded, all form fields should be empty.

To calculate the cost of the user's tour use the information that appears in the table below. Note that the daily cost of travelling during the peak season is $20 more than the daily cost of travelling during the off-peak season, regardless of the type of accommodation selected.

Table 3-1: Daily tour costs for different accommodation types in different seasons

Accommodation type	**Daily cost during off-peak season (September - May)**	**Daily cost during peak season (June - August)**
Camping	$95.50 per day	$115.50 per day
Budget hotel	$140.30 per day	$160.30 per day
Premier hotel	$170.70 per day	$190.70 per day

The following examples illustrate how the cost is calculated.

Example 1: A person wants to take a 7-day tour during the off-peak season, staying in premier hotel accommodation. The total cost will be $1,195.

Daily cost = $170.70

Total cost = $170.70 per day × 7 days = $1,194.90

Rounded total cost = $1,195

Example 2: A person wants to take a 14-day tour during the off-peak season, staying in budget hotel accommodation. The total cost will be $1,964.

Daily cost = $140.30

Total cost = $140.30 per day × 14 days = $1,964.20

Rounded total cost = $1,964

Example 3: A person wants to take a 14-day tour during the peak season, staying in budget hotel accommodation. The total cost will be $2,244.

Daily cost = $140.30 + $20 = $160.30

Total cost = $160.30 per day × 14 days = $2,244.20

Rounded total cost = $2,244

During the calculation process, the JavaScript code should validate the data supplied by the user. If the data are incomplete or incorrect, the script should display an alert box explaining the problem rather than attempt the calculation.

The script should use the `getElementById()` function to access the form input fields and their values rather than use alternative techniques.

Technical constraints

The following technical constraints apply to this assignment.

- The web page should display correctly in the latest versions of Mozilla Firefox and Google Chrome on a PC.
- The web page must be constructed with HTML5, CSS and JavaScript only.
- The appearance of the web page must match the screenshots that are provided. Don't try to enhance the appearance of the page or add extra elements to it. Use only the CSS code that has been provided for this assignment (if applicable). Additional CSS code is not required.
- The web page should not be installed on a web server. The page must not contain any server-side scripts such as CGI, PHP, ASP or ColdFusion code. It should be possible for the marker to view the page from the submitted file without connecting to the Internet.

Hints

The following suggestions will help you to complete the assignment.

- Build the HTML form first. This is the easiest part of the assignment and the logical starting point. Forms are discussed in Study Guide modules 10 and 11.
- Define an event handler for your Calculate button that calls a user-defined function when you click it. Give the function an appropriate name. Event handlers and functions are discussed in Study Guide modules 6 and 11.
- Write the function that you called in the previous step. This function should extract the data it needs from the form, calculate the answer, and display it in an alert box. The function has the following basic parts or sub-problems:
    1. Inspect each Accommodation Type radio button to identify which one has been selected.
    2. Use the selected Accommodation Type radio button to determine the daily cost for a traveler.
    3. Determine whether the peak season checkbox has been selected or not.
    4. If the peak season checkbox has been selected, adjust the daily cost accordingly.
    5. Inspect each Duration of Tour radio button to identify which one has been selected.
    6. Use the selected Duration of Tour radio button and the daily cost to calculate the total cost of the tour, and display the appropriate message in an alert box.
- Refer to Study Guide modules 10 and 11 for examples of how to manipulate radio buttons and checkboxes. You can use similar techniques when you write the function.

Report

You are required to write a report about your work on this assignment. The report should be prepared as a Microsoft Word document named report.docx. It should be entitled 'DGTL11006 Assignment 3', and the title should be followed by your name and student number. The length of the report should be between 600 and 800 words. The structure of the report is outlined below. Please use the headings that are provided.

- *Duration.* This section should provide an estimate of the total number of hours you spent working on the assignment. This estimate should not include the time you spent attending classes or engaging in personal study.
- *Resources*. This section should describe the resources you used to complete this assignment. For example, you may have benefited from the course materials, the online discussion forum, a textbook, an online tutorial, or help from others.
- *Method*. This section should describe the steps you performed to complete this assignment
- *Difficulties*. This section should describe any difficulties you encountered while working on this assignment and how you resolved or overcame those difficulties.
- *Lessons*. This section should describe what you learned from this assignment.
- *Conclusion*. This section should explain whether you think this assignment was a useful learning exercise or not, and provide reasons.
- *References*. This section should provide a list of references to any works that are cited in your report, such as books, journals, periodicals, newspapers and websites. If your report does not have any references, this section may be omitted. References must be provided whenever you quote, paraphrase or summarise the work of another author. The prescribed referencing system for this course is the Harvard system, which is also known as the author-date system or the name-year system. An *Abridged Guide to the Harvard Referencing Style* can be downloaded from the following address: https://www.cqu.edu.au/student-life/services-and-facilites/referencing

Presentation and submission

This assignment must be submitted electronically through the unit web site. You must submit a single archive file (zip file) named assignment3.zip that contains the following files:

- an HTML file named index.html containing your solution; and
- a Microsoft Word file named report.docx containing your report.

Instructions for submitting assignments electronically are available on the unit website.

Help with creating a zip file

If you are a Windows user, you can create a zip file by right-clicking on the file(s) or folder(s) that you want to compress, selecting Send To > Compressed (Zipped) Folder from the pop-up menu, and finding the newly created zip file in the same directory. To rename the zip file, right-click it, choose Rename from the pop-up menu, and type the new name.

If you are a Mac user, you can create a zip file by right-clicking on the file(s) or folder(s) that you want to compress, selecting Compress Items from the pop-up menu, and finding the newly created zip file in the same directory. To rename the zip file, click the icon of the zip file, press the Enter key, and type the new name.

Plagiarism

The work that you submit for this assignment must be your own. You may not collaborate with other people to complete this assignment. You must not post your assignment solution online. You must not store your assignment solution in a location where others might access it. You must not request help with this assignment in any online forums outside the unit web site. You may ask for help with this assignment through the online forum on the unit web site, but **do not post fragments of your code there**. Refer to the University's Plagiarism Policy for more information.

Assessment criteria

The assessment criteria for this assignment are presented in the following table. Penalties will be applied for late submission and for failing to comply with the assignment's requirements.

Criteria	**Marks**
Appearance of the web page • file is correctly named • correctly uses the required HTML5 code • page has an appropriate title • page appearance matches the example provided	5
HTML form • form appearance matches the example provided • uses appropriate attributes in the tags that define the form controls • form controls are appropriately labelled • correctly uses an event handler • coding is elegant and efficient	5
Accommodation type • correctly determines the accommodation type from the form input • correctly uses the getElementById() function • displays an error message if the accommodation type is not selected • coding is elegant and efficient	5
Peak season • correctly determines if the user will be travelling during the peak season from the form input • correctly uses the getElementById() function • coding is elegant and efficient	5
Duration of tour • correctly determines the duration of the tour from the form input • correctly uses the getElementById() function • displays an error message if the duration of the tour is not selected • coding is elegant and efficient	5

Calculation • correctly determines the total cost of the tour from the form input • correctly rounds the total cost of the tour to the nearest integer • displays the correct message • coding is elegant and efficient	5
Coding style • has appropriate layout, indentation and spacing • uses meaningful names for variables and functions • declares all variables • has appropriate comments	5
Report • addresses the required topics clearly • has appropriate formatting and presentation • has a word count within the specified limits • demonstrates correct grammar, punctuation and spelling • demonstrates appropriate written expression and style • demonstrates correct referencing, if required	5
Total	**40**