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| **A logo on a green background  Description automatically generated** | |
| **School of Digital Technologies BDT – Bachelor of Digital Technologies**  **502.525 Front End Web Development**  **Semester 1 – 2025**  **TEST 02** | |
| Course | 502.525 Front-End Web Development |
| Assessment type | Open Book Practical Test 2 |
| Date | Week 14 - **Wednesday, 04 June, 2025** |
| Course contribution | **30%** |
| Time Allowed | 125 minutes |
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| **Student ID:** | 230006704 |
| **Student NAME:** | Kusal Sahasraka Samarawickrama |
| **Notice:**  **By submitting this test, you are agreeing with the following Statement of Valid Authorship:**  **Statement of Valid Authorship**  I hereby confirm that these test answers are my own work done in the test time. This means that to the best of my knowledge and belief, this test contains only my own created and assembled responses to these particular questions without communication with any other person except the course lecturer. I make this statement fully understanding that, should it be found false, I will, in most circumstances, receive zero marks for this test.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |

This test is confidential to you. Do not share the test questions or your responses.

**Front End Website Development - Practical Test [30 marks]**

Open Book Practical Test.

**The test assesses the following learning outcomes:**

* LO1: Apply the fundamentals of responsive web design and JavaScript.
* LO2: Apply the fundamentals of web interface design using HTML and CSS
* LO3: Implement visually rich interactive dynamic web applications and publish them.
* LO4: Test, debug, and correct web applications

**Test Instructions**

* You can use your own laptop or a lab machine.
* Begin by downloading the test zip file named "**FEWD-Test 2.zip**" from Canvas into your designated working folder.
* Next, unzip the test file within your working folder by right-clicking and selecting "Extract All."
* As a result, you will obtain a new folder labelled "FEWD-Test 2"
* To personalize this folder, rename it by adding your student's name to it, for example, "FEWD-Test 2-John Smith"
* Open Visual Studio or Visual Code and set the recently renamed folder as the parent directory for your website.
* After completing the test, compress all your work into a zip file and submit it to Canvas.

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| **Question** | **Topic** | **Marks** | **Suggested Time** |
| 1 | CSS Menu and Content Presentation | 7 | 35 min |
| 2 | Form with Bootstrap and Validation | 10 | 40 min |
| 3 | Coding using JavaScript | 13 | 45 min |
|  | **TOTALS** | **30** | **125 min** |

**QUESTION ONE CSS Menu and Content Presentation [7 Marks]**

Open “**Index.html**” and solve tasks 1-1 to 1-7. Comment your code changes.

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| **1.1** | **In “Index.html”, modify the menu so that on clicking link "Blog"  "My Team", we navigate to file "teamwork.html"** | [1 mark] |

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| **1.2** | **Modify code so that text appears in (#880BF4) colour when the mouse hovers over it - for both the header bar and the sub-menus.** | [1 mark] |

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| **1.3** | **Use CSS styling to give the <div class="content"> on page “index.html”, a background colour of (#09E5F6).** | [1 mark] |

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| **1.4** | **Use CSS styling to give the <div class="content"> on page “index.html”, a width of 940px with a padding of 20px** | [1 mark] |

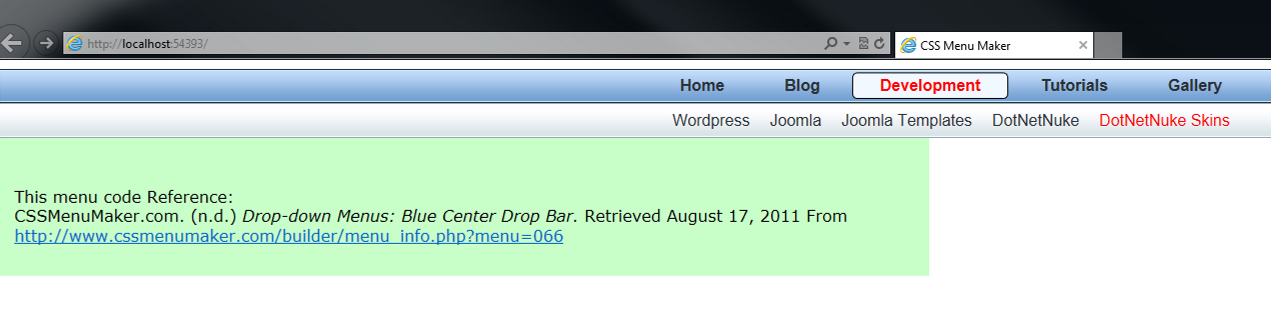
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| **1.5** | **Modify page “teamwork.html” to apply a default font to all elements.  This default font has a font family of “**Courier New**” and a font size of 0.5cm.** | [1 mark] |

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| **1.6** | **There is a syntax error in stylesheet which is responsible for not displaying the background in the navigation bar correctly. Fix the error to resemble the displayed menu image in the next page** | [1 mark] |

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| **1.7** | **Add code comments explaining the changes you made** | [1 mark] |

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Screen shot of "index.html" after changes 1-2, 1-3, 1-4. 1-5 (**colours are different here**)



**QUESTION TWO Form Responsiveness and Validation [10 marks]**

Work on file "**Registration.html**" through the following steps. This old form uses <table …> element with its children for layout. Your boss considers this to be bad HTML design and gives you the job of re-coding it with "**Bootstrap 5**". Comment your code changes.

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| **2.1** | Add code to this page to use **Bootstrap 5** via CDN (Content Delivery Network) links. | [1 mark] |

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| **2.2** | Replace the existing **<table ...>** layout with a **Bootstrap-based grid/layout** that displays as two columns on "medium" and larger screens, and as a single column on smaller screens. Use Bootstrap's definition of "medium" width for this task.  **Note: layout the form as shown in the provided screenshot below. You can choose different colours.** | [4 marks] |

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| **2.3** | Provide validation coding to improve the client-side quality of user input.  **Some business rules for this data entry:**   * The user is **not permitted to leave any fields empty** before submitting. [2 Marks] * Provide **error messages** if any field is empty using bootstrap [2 Marks]. * Age needs validation of numeric input. Age should be between 1 and 100 [1 Mark]. | [5 marks] |

The screenshot is on the next page.

A screenshot of a computer

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**QUESTION THREE JavaScript [13 marks]**

Work on file "**Calculation.html**" through the following steps. Comment your code changes.

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| **3.1** | (a) **Write a JavaScript function that accepts a string as a parameter and counts the number of vowels within the string. Vowels are the characters "a", "e", "i", "o", and "u". Consider capital letters to be the same as lower case [2.5 Marks].**  (b) Display the result when text is entered into the text box.  Use the <p> with id “VowelsResult” to display the result of this operation [0.5 Mark] | [3 marks] |

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| **3.2** | **(a) Write a JavaScript program to calculate the volume of a sphere. [1.5 Marks].**  Hint: Sphere Volume (v) is    (b) Display the result when radius is entered into the text box.  Use the <p> with id “VolumeResult” to display the result of this operation [0.5 mark] | [2 marks] |

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| **3.3** | **(a) Write a JavaScript code to display the grade based on the mark as follows [2.5 Marks]:**   |  |  | | --- | --- | | (100 - 90) | A | | (89 - 80) | B | | (79 - 70) | C | | (69 - 60) | D | | (59 - 0) | E |   (b) Display the result when mark is entered into the text box.  Use the <p> with id “GradeResult” to display the result of this operation [0.5 mark] | [3 marks] |

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| **3.4** | **Move all your JavaScript code into an external file (e.g., scripts.js) and link it to the (Calculation.html) HTML file.** | [1 mark] |

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| **3.5** | **Comment your code to explain your changes.** | [1 mark] |

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| **3.6** | **Deploy your completed project to GitHub. Include the URL in a comment at the top of your index.html.** | [3 marks] |

**END of TEST**