CA1 Description 2021 – 22
Web Application Development
(BSHCIFSC2 – HCC2 – BSHTM2 – HCBC2 – BSHCE2 – HCCENCI2)

Administrative Data

This Continuous Assessment (CA) is an **individual** assignment that is worth **50% of the final grade awarded**. As published in the School portal, the deadline for submission of the assignment is:

Submission Date Friday 19*th* November 2021 23:55hrs

Extension/Re-run
Should any student miss the assessment deadline with a valid reason, the student can apply for an extension/rerun using the Extension/Re-run Form online, via NCI360.

N.B.
All submissions will be electronically screened for evidence of academic misconduct (plagiarism and collusion).

1   Assignment

This assessment is composed of two parts:

Part A (25%) requires the development of two separate small web applications one using HTML, CSS, JavaScript, and XML technologies and the other using HTML, CSS, JavaScript, and JSON technologies. See details about the web application requirements in Section 1.1.

Part B (25%) requires a recorded presentation detailing the background, problem, solution and key points related to the given technology. See details about the presentation requirements in Section 1.2.

1.1   Part A: Web Application Requirements

I.   *Products Application (15%)*

Assume that you are responsible for developing, maintaining, and updating a third-party company's web application.

The web application provides information of all products manufactured by the company and allows users to query the inventory for products availability.

The company had a bad experience with another partner in the past, thus the IT manager does not want to grant access permission for the web application accessing products and inventory information directly from the company's database. Instead, the IT manager proposes to exchange the required information using XML technologies.

The company's IT department will export the information from the database into an XML file and send it to you. Your group is responsible for validating the structure and content of the XML file and updating the content in the web application.

Your tasks are:

1. Define an XML file structure that allows the exchange of products information listed in Table 1. Each XML file may contain the information of at least 10 products. The code of the product should be defined as an attribute of the product element rather than an element itself.

Description	Type
Category	String
Code	Codes must be unique IDs of the form ###-## where # is a digit
Name	String
Description	String
Quantity	Integer greater or equal than 0
Unit Price	Decimal greater or equal than 0

2. Create an XML Schema that validates the received XML files before they are uploaded into the web application according to the datatype shown in Table 1.

3. Create a web application that:

    - Displays information about the products' Code, Name, Quantity and Unit Price information stored in the XML file.

    - Allows the searching of these products by providing a field that the user can enter a product code and button that when clicked should look for the product and present all the product's information to the user. If the product's code does not exist, the user should be notified.

4. The pages must have a **navigation menu** that allows the user to navigate through the different web application pages

II.   Weather Application (10%)

Assume that OpenWeatherMap (https://openweathermap.org/) have contacted you to develop an application for them, with them providing a web service for you to use.

Your tasks are:

1. Develop an application that allows a user to enter a single city (on a HTML page) and request the OpenWeatherMap web service to retrieve this information and render this information to the web page.

Your application should be making (a GET) request to the http://api.openweathermap. org/data/2.5/forecast? mode=json&q=[CITY]&appid=[API ID] URL to retrieve the information on the web page.

Part A of the assessment will be graded using the marking grids shown in Table 1.

Table 1: Part A I – Marking Grid – Continuous Assignment 1, Web Application Development 2020 – 2021

Criteria	Total Points
XML definition	25
XML Schema	20
Navigation menu	5
Parsing contents of XML file and rendering retrieved information	25
Search page using JavaScript	25

Table 1: Part A II – Marking Grid – Continuous Assignment 1, Web Application Development 2020 – 2021

Criteria	Total Points
Request to OpenWeatherMap web service	40
Rendering data retrieved from OpenWeatherMap on a webpage	40
Operation of Form to facilitating the request to OpenWeatherMap	20

Both of these applications should be submitted in a zip file in two separate folders.

1.2   Part B: Presentation Requirements

This part of the assessment requires a recorded presentation on a topic of your choice surrounding the background, solution provided and key points relating to frameworks, tools, languages, or controls available for developing a web application which are not addressed as part of this module.

You are required to:

- Record a 10-minute video presentation about the given topic

- Submit the presentation slides (PDF) and a link to the recording in a text file on Moodle by the submission deadline

Part B of the assessment will be graded using the marking grids shown in Table 2.

Table 2: Part B – Marking Grid – Continuous Assignment 1, Web Application Development 2021 – 2022

Category	Scoring Criteria	Total Points
Organisation	The type of presentation is appropriate for the topic.	4
	Information is presented in a logical sequence.	4
	Presentation appropriately cites requisite number of references.	4
Content	Introduction is attention-getting, lays out the problem well, and establishes a framework for the rest of the presentation.	10
	Technical terms are well-defined in language appropriate for the target audience.	10
	Presentation contains accurate information.	10
	Material included is relevant to the overall message/purpose.	10
	Appropriate amount of material is prepared, and points made reflect well their relative importance.	10
	There is an obvious conclusion summarizing the presentation.	10
Presentation	Information was well communicated.	6
	Speaker uses a clear, audible voice with audio levels remaining the same throughout the presentation.	6
	Delivery is poised, controlled, and smooth.	5
	Good language skills and pronunciation are used.	5
	Visual aids are well prepared, informative, effective, and not distracting.	3
	Length of presentation is within the assigned time limits.	3

2 Submission Instructions

The two deliverables must be submitted via Moodle:

Web Application Source-Code The complete web application source-code must be submitted in asingle compressed (e.g., ZIP) file.

Topic Presentation The presentation slides in Microsoft PowerPoint (e.g., .ppt ot .pptx) or PDF format.

Presentation Link Link to the video presentation in MP4 format.