

**CCT College Dublin Continuous Assessment**

<b>Programme Title:</b>	<i>Bachelor of Science in Computing in Information Technology</i>		
<b>Cohort:</b>	<i>Sept 2023 intake (2<sup>nd</sup> yr)</i>		
<b>Module Title(s):</b>	<i>Server Side Programming</i>		
<b>Assignment Type:</b>	<i>Group</i>	<b>Weighting(s):</b>	<i>60%</i>
<b>Assignment Title:</b>	<i>CA2</i>		
<b>Lecturer(s):</b>	<i>Kayoum Khbuli</i>		
<b>Issue Date:</b>	<i>25<sup>th</sup>-Nov-2024</i>		
<b>Submission Deadline Date:</b>	<i>16<sup>th</sup>-Dec-2024</i>		
<b>Late Submission Penalty:</b>	Late submissions will be accepted up to <b>5</b> calendar days after the deadline. All late submissions are subject to a penalty of <b>10%</b> of the mark awarded. Submissions received more than 5 calendar days after the deadline above <b><u>will not</u></b> be accepted and a mark of 0% will be awarded.		
<b>Method of Submission:</b>	<b>Moodle</b>		
<b>Instructions for Submission:</b>	Word Document Only (No PDF's), DO NOT ZIP YOUR FILES UPLOAD THE FILES TO MOODLE INDIVIDUALLY, <b>Submit individual .JS .html files do not ZIP the files</b>		
<b>Feedback Method:</b>	<b>Results posted in Moodle gradebook</b>		
<b>Feedback Date:</b>	<i>After February Exam Board</i>		

### Learning Outcomes:

Please note this is not the assessment task. The task to be completed is detailed on the next page.

- MLO 3 – Implement appropriate multi-tiered architectures to satisfy system requirements.  
(Linked to PLO 3 (Stage 1/2 SLO 3))
- MLO 4 - Identify where user authentication can benefit the user experience while strengthening system security and design a robust authentication procedure.  
(Linked to PLO 4 / PLO 5 (Stage 1/2 SLO 4 / SLO 5))
- MLO 5 – Collaborate within a team to assess system requirements for both client and server data storage for a web-based application and implement robust solutions.  
(Linked to PLO 6 (Stage 1/2 SLO 6))

Attainment of the learning outcomes is the minimum requirement to achieve a Pass mark (40%). Higher marks are awarded where there is evidence of achievement beyond this, in accordance with QQI

*Assessment and Standards, Revised 2013*, and summarised in the following table:

Percentage Range	CCT Performance Description	QQI Description of Attainment	
		Level 6, 7 & 8 awards	Level 9 awards
90% +	Exceptional	Achievement includes that required for a Pass and in <b>most</b> respects is significantly and consistently beyond this	Achievement includes that required for a Pass and in <b>most</b> respects is significantly and consistently beyond this
80 – 89%	Outstanding		
70 – 79%	Excellent		
60 – 69%	Very Good	Achievement includes that required for a Pass and in <b>many</b> respects is significantly beyond this	Achievement includes that required for a Pass and in <b>many</b> respects is significantly beyond this
50 – 59%	Good	Achievement includes that required for a Pass and in <b>some</b> respects is significantly beyond this	Attains all the minimum intended programme learning outcomes
40 – 49%	Acceptable	Attains all the minimum intended programme learning outcomes	
35 – 39%	Fail	Nearly (but not quite) attains the relevant minimum intended learning outcomes	Nearly (but not quite) attains the relevant minimum intended learning outcomes
0 – 34%	Fail	Does not attain some or all of the minimum intended learning outcomes	Does not attain some or all of the minimum intended learning outcomes

Please review the CCT Grade Descriptor available on the module Moodle page for a detailed description of the standard of work required for each grade band.

The grading system in CCT is the QQI percentage grading system and is in common use in higher education institutions in Ireland. The pass mark and thresholds for different grade bands may be different from what you have experience of in the higher education system in other countries. CCT grades must be considered in the context of the grading system in Irish higher education and not assumed to represent the same standard the percentage grade reflects when awarded in an international context.

**CA1 NOTE DO NOT ZIP YOUR SUBMISSION FILES, ALL FILES MUST BE SUBMITTED INDIVIDUALLY**

**Submissions that are suspected of plagiarism and/or inclusion of AI (CHATGBT, BARD etc...) Generated content will be referred to the college authorities.**

## Assessment Task

Students are advised to review and adhere to the submission requirements documented after the assessment task.

**Please remember that simply performing the analyses is a requirement to achieve a grade of PASS. Critical analysis and independent research are required for higher marks.**

**Code quality standard apply - marks may be lost for poor programming practices, such as non-descriptive variable names, poor/no comments etc.**

## Scenario

Your group have been tasked with implementing a robust system that enables the company to securely communicate with a database, you are required to code the systems architecture and write a detailed report explaining your choice of functions and structure of code, in your report provide clear rationale to encompass the journey of user data through the server starting from the client. Use the following Task content as guidance for the report, do not use the Task content as headers for the report and do not provide definitions.

**You must provide the individual workload distribution within the group, failure to provide individual contributions will result in inaccurate group marking. Marks will only be awarded for SPECIFIC contributions. Phrases such as “I helped with...” will merit ZERO marks.**

## Task

**You are provided with two files index.js and database.js, use these files to complete your task.**

### **A) Data Validation and Database Insertion:**

You will be provided a csv dataset.

- Implement JavaScript methods to validate the submitted CSV data, this is provided in the index.js file.
- If validation fails for a record, throw an error message indicating the index position of the failed record.
- Insert only the valid records into the database, make sure the table name is “mysql\_table”.
- Ensure the database table column names are camel cased as follows i.e “first\_name”.

Marks[25]

### **B) Form and Data Validation Rules:**

- You are required to create a HTML file called form.html
- Connect the created form to the database.
- Use JavaScript to enforce validation rules:
  - First name and second name must be alphanumeric and of length 20 characters (Max).
  - Email must follow the correct email structure.
  - Phone number must contain only numeric characters and be of length 10.
  - Eircode must start with a number, be alphanumeric, and have a length of 6 characters.

Marks[25]

### **C) Middleware for Request Handling:**

- Implement middleware to handle incoming requests.
- Check if the specified port is open; if not, return an error message to the user.
- Ensure the database follows the correct schema before inserting data by reading the database information first.
- Collaborate within a team to assess system requirements for client and server data storage, ensuring a secure and efficient solution in the report, include framework image references.

Marks[25]

### **D) Secure Connection Protocols and XSS Mitigation:**

In your report, highlight how these security steps can protect against data leaks and thwart attacks:

- HTTPS Implementation
- Content Security Policy (CSP) Headers
- User Input Sanitization
- Regular Software Updates and Security Patches

Marks[25]

Total Marks[100]

## Submission Requirements

All assessment submissions must meet the minimum requirements listed below. Failure to do so may have implications for the mark awarded.

All assessment submissions must:

- Be submitted as a Word document, and .JS files
- Submit a word file – 1500 words.
- Be submitted by the deadline date specified or be subject to late submission penalties
- Be submitted via Moodle upload
- Use Harvard Referencing when citing third party material
- Be the student's own work.
- Include the CCT assessment cover page.

## Additional Information

- Lecturers are not required to review draft assessment submissions. This may be offered at the lecturer's discretion.
- In accordance with CCT policy, feedback to learners may be provided in written, audio or video format and can be provided as individual learner feedback, small group feedback or whole class feedback.
- Results and feedback will only be issued when assessments have been marked and moderated / reviewed by a second examiner.
- Additional feedback may be provided as individual, small group or whole class feedback. Lecturers are not obliged to respond to email requests for additional feedback where this is not the specified process or to respond to further requests for feedback following the additional feedback.
- Following receipt of feedback, where a student believes there has been an error in the marks or feedback received, they should avail of the recheck and review process and should not attempt to get a revised mark / feedback by directly approaching the lecturer. Lecturers are not authorised to amend published marks outside of the recheck and review process or the Board of Examiners process.
- Students are advised that disagreement with an academic judgement is not grounds for review.
- For additional support with academic writing and referencing students are advised to contact the CCT Library Service or access the [CCT Learning Space](#).
- For additional support with subject matter content students are advised to contact the [CCT Student Mentoring Academy](#)
- For additional support with IT subject content, students are advised to access the [CCT Support Hub](#).