INFO8231 Systems Development: Concepts & Analysis
Assignment 4

This assignment is a continuation of **A1**, **A2** and **A3**. **INFO8231 A1 rules** will apply.

Before you begin:

In MS Teams:

 Download the **A4_ITCPA_TeamYY_Template.docx** from **eConestoga** and copy to your team's **General\A4** folder on your MS Teams **Files** tab.

 Rename your document to **A4_ITCPA_Team#.docx**

- Put your entire **A4 solution** in this single **MS Word** document.

 Fill out the **Assignment 4 header** with your section, team # and student names.

Reminder: Team members must sign their own name.

A. Individual Requirement

 Complete the Visual Paradigm tutorial: **Lab_SystemSequenceDiagram.pdf** (part of PA2).

 Complete the Figma wireframe tutorial: **Lab_Figma_Wireframe.pdf**.

- *Optional: You can explore other wireframe tools such as Balsamiq, JustInMind, and Adobe XD.*

 Study the **UX for Web Forms** videos

- Principles: https://www.linkedin.com/learning/ux-for-web-forms/form-design-principles
- Considerations: https://www.linkedin.com/learning/ux-for-web-forms/considerations-prior-to-starting
- Expectations: https://www.linkedin.com/learning/ux-for-web-forms/expectations

 Read and study the **ITCPA Case Study** documents and background information in **A1**, **A2** and **A3**.

B. Team Assignment 4

You will continue to work with the **IT Capstone Project Approval (ITCPA)** system case study with the following subsystems:

- Student Team Management Subsystem (**STMS**)
- Capstone Project Matching Subsystem (**CPMS**)

 Determine your subsystem for **Task 1** and **Task 2** below.

- For *odd-numbered teams* (SA-11, SA-13, …), do the **STMS** use cases
- For *even-numbered teams* (SA-12, SA-14, …), do the **CPMS** use cases

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Task 1: Use Case Description with Wireframes, SSD and AD

1A. Fully-developed Use Case Description

 Fill out the **Use Case Description Template** below using one of the following:

- Use Case #: **UC11**
  - **STMS** requirement *for odd-numbered teams*: **Student Team looks up the list of approved client proposal**
    - *Student team enters the filtered conditions and the System looks up the approved client proposals that are still available*.

- Use Case #: **UC21**
  - **CPMS** requirement *for even-numbered teams*: **Client looks up the list of student teams**
    - *Client enters the client proposal information and the System looks up the student teams who applied to the proposal.*

 Determine what input(s) the actor must provide and the system response(s)

 Draw a wireframe (Figma, Balsamiq, JustInMind, or Adobe XD)

- *Hint: the screens must directly support the use case*

Use Case #	
Use Case Name	
Scenario	
Triggering Event	

Brief Description		
Primary Actor		
Included Use Cases (if any)		
Stakeholders		
Pre-conditions		
Post-conditions		
Wireframe(s)		
Flow of Activities	**Actor**	**System**
Exception Conditions		

Use Case Description Template

1B. System Sequence Diagram (SSD)

 Draw an **SSD** to show the sequence and the input/output messages associated with the use case.

Hint: Your wireframe(s) can help identify the input and output messages.

1C. Activity Diagram (AD)

 Draw an **AD** to show the flow of activities associated with the use case.

Hint: To get started, select and use the verbs that are in Slides 14 to 16 of Chapter 5.

- For the actor: use verbs such as “enter”, “lookup”, “assign”, “select”, etc.
- For the system: use verbs such as “display”, “create”, “update”, “print”, etc.

Task 2: Use Case Description with Wireframes and SSD

2A. Fully-developed Use Case Description

 Fill out another **Use Case Desc Template** using one of the following:

- Use Case #: **UC12**
  - **STMS** requirement *for odd-numbered teams*: **Student Team apply to *zero or more* proposals**
    - Start with “Lookup list of client proposals”
    - End with “a student team successfully applied to zero or more client proposals”

- Use Case #: **UC22**
  - **CPMS** requirement *for even-numbered teams*: **Client approve *zero or more* student teams**
    - Start with “Lookup list of student team applications”
    - End with “a client successfully approved zero or more student teams”

 Determine what input(s) the actor must provide and the system response(s)

 Draw a wireframe (Figma, Balsamiq, JustInMind, or Adobe XD)

 At least one (1) loop is required in your solution

2B. System Sequence Diagram (SSD)

 Draw an **SSD** to show the sequence and the input/output messages associated with the use case.

Tips for **Task 1** and **Task 2:**
 Iterate your solution to improve your fully-developed use case descriptions

- Incorporate the “form design principles” to make your forms functional and easy to use.
  - Can you improve the usability of the form?
  - Can you reduce clutter and simplify your forms?
  - Can you pre-filter your data prompted?
- Consider what happens to the set of data over time (e.g., over multiple school terms and multiple school years).
  - How will the form relate to other digital or paper-based systems?
  - Can you improve the user interaction?

Task 3: CRUD Matrix

 Do a **CRUD analysis** based on your current Domain Class Diagram (**DCD**) from **A3** for the *four (4) Use Cases* provided in the table below.

	Use Case			
Domain Class	<UC #11 or #21 from **Task 1**>: <Use Case Name>	<UC #12 or #22 from **Task 2**>: <Use Case Name>	<UC #14>: Cancel a student team application	<UC #41>: Attach document to a client proposal
Student				
StudentTeam				
…				
Project				
StudentTeamProjectApplication				
…				

 Based on the CRUD analysis technique, fill out the CRUD cells above.

*Note: Analyze each of the four (4) use cases carefully. Your solution must not contradict any of the information provided in **A1**, **A2**, and **A3**.*

 Ensure all the relevant domain classes in the CRUD Matrix, use case descriptions, activity diagrams and SSDs all fully support each other.

Reminders:

 Copy all the **UML diagrams** to your solution document **A4_ITCPA_Team#.docx**.

 Checkpoint: Use the **A4 marking sheet** to self-evaluate your team solution.

Submission Requirements:

 Submit all your *.docx, raw wireframe (*.fig, *.bmpr, *.vp, *.xd) and vpp solution files (*.vpp) to the **Assignment Dropbox** on **eConestoga** (i.e., **A4_Team**).