CITS 4401/3301
Project (Phase) 2
Version: 1.0
Date: 01 May 2023

In part 1 of the project your group analysed requirements for the system, refine them through an interview with a stakeholder, and document the results of your analysis.

 In this part (2) of the project your group will be required to complete some parts of the design for this system. Recall that system design is the process of transforming the analysis model by

 1. defining the design goals of the project
 2. decomposing the system into smaller subsystems
 3. selection of off-the-shelf and legacy components
 4. mapping subsystems to hardware
 5. selection of persistent data management infrastructure
 6. selection of access control policy
 7. selection of global control flow mechanism
 8. handling of boundary conditions

This document describes the second part of the CITS4401 group project. Part 2 (design) due in week 11 is worth 15% of the marks for CITS4401. Each group member is expected to spend around 20 hours on part 2 of the project, including background reading.

All project deliverables (questions and final report) must be submitted in cssubmit as a PDF file by the submission deadlines. Make sure you use the group project part 2 submit area for CITS4401.

• The submission of your full project group report is via cssubmit by 8pm on Thursday 18 May 2023 (week 11). Only one person in the group should submit the group report. Ensure that the name and student number of all group members is included in the submission.

• Each student should submit a one page Individual project reflection in cssubmit by 8pm on Thursday 18 May 2023 (week 11). Each person in the group should submit their own project reflection.

See CITS4401 Group Project Part 1: Requirements for general rules about the organisation of this project. These rules apply to both parts of the project.

Questions:

A colleague of yours has commenced design for CyberWin , and has produced (based on the results of requirements analysis) the following UML class diagram for the first phase of implementation. Please note that some actors and use cases may be missing from this diagram. However, for the scope of this phase please focus on this diagram only.
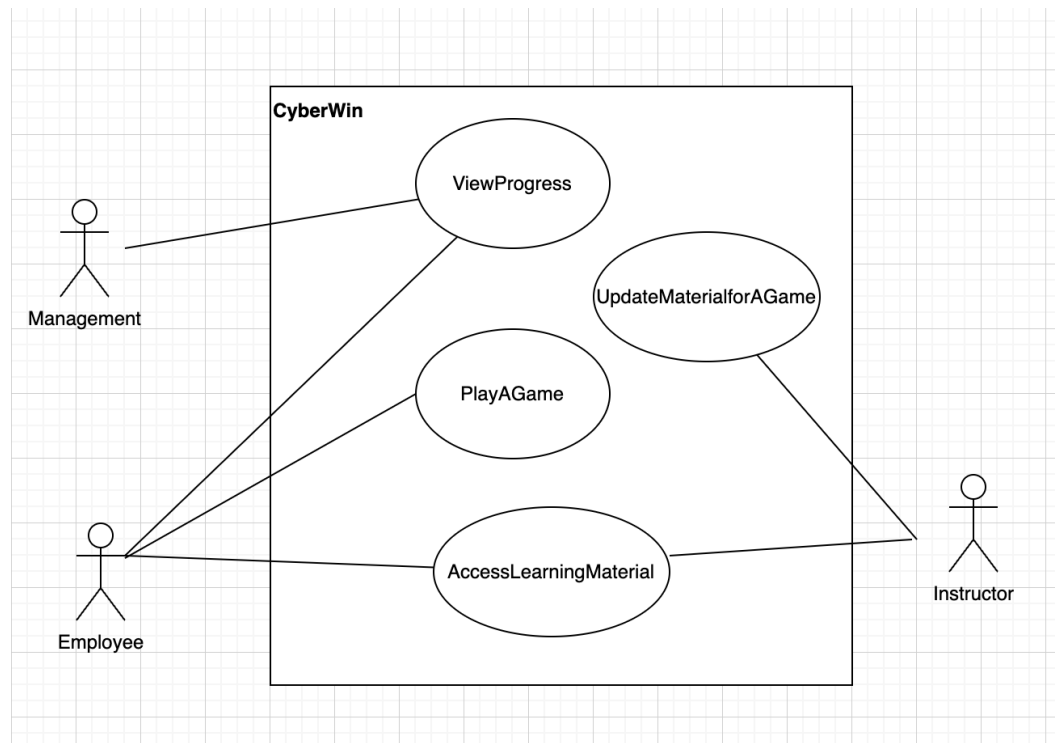
1. UML modelling Select one of the four use cases from your colleague's use case diagram and use CRC cards (or another method) to model that use case. For your chosen use case decide which aspects (static or dynamic) are most important. Then select an appropriate UML model (class, sequence or state) for documenting your design of this use case. Submit your UML diagram, plus written documentation of any design decisions or other assumptions you have made. You do not need to submit your CRC card analysis, but may include this as an appendix if you wish.

2. Interfacing with off-the-shelf and legacy components. CyberWin will need to interface with a number of existing systems. Choose two (2) existing systems in the organisation that CyberWin system needs to interact with. Don't try to identify all systems, just pick 2 contrasting ones. The group should research strategies for managing the software interface between CyberWin software and each of your existing systems. You will need to research existing technologies that can be used for interacting with external (ak.a. existing systems) entities. For instance, web API, software library API, phone or web application, publish-subscribe systems or some combination of these.

For each of your 2 selected external systems write a one-page summary of your recommendations and justifications covering:

- Name the external system you have chosen
- Justify why this system is important for CyberWin

- Briefly explain for what functions CyberWin will need to interact with the external system

- Which interface technology(s) do you recommend for interacting with this particular external system? Use a formal rationale argument to document your recommended design decisions and the alternative design decisions you considered. Recall that a rationale argument should clearly identify: Issue, Criteria, Proposals, Arguments (advantages, disadvantages, risks) and Resolution. Also mention any unresolved questions or assumptions you identify.

3. Access control policy. Access control policies are high-level requirements that specify how access is managed and who may access information under what circumstances. The goal of access control is to minimize the security risk of unauthorized access to the system. Different types of access to CyberWin are required for its different types of users. Research some access control policies that could be used to manage secure access. Write a one page summary explaining: 1) The specific risks or threats for CyberWin that need to be mitigated by the access control policy; and 2) Your recommended design for access control in CyberWin.
Use a formal rationale argument to document your recommendation considering alternative design decisions. Recall that a rationale argument should clearly identify: Issue, Criteria, Proposals, Arguments (advantages, disadvantages, risks) and Resolution. Also mention any unresolved questions or assumptions you identify.

Assessment Criteria

Assessment Criteria Each component of the report will be assessed on whether
• it is clear and logically laid out
• it meets the project requirements given
• it describes and justifies any assumptions made.

The project will be marked out of 30 using the following criteria.

Details of the task requirements are provided above.
1. UML modelling: 8 marks Criteria: Identifies appropriate UML model; Assumptions described and justified; Clear and concise UML diagram;
2. Interfacing with off-the-shelf and legacy components: 8 marks Criteria: Identifies and justifies 2 relevant external components and interfaces to them; Recommends and justifies

appropriate interface technology(s) to be used; Identifies and assesses risks and any unresolved issues.

3. Access control policy: 7 marks Criteria: Identifies specific threats to be addressed; Documents recommendations using formal rationale. Identifies unresolved questions and assumptions. Clear and concise documentation of the proposed solution using text and appropriate diagrams

4. Presentation of the group report: 3 marks Criteria: Professional presentation of the group report.

5. Individual Reflection: 4 marks Criteria: Succinct and insightful reflections on the project process.