

Assessment Brief

Module Leader: Ra'ed Bani Abdelrahman		Level:5
Module Name: Applied Software Engineering		Module Code: 55-508876
Assignment Title: Portfolio (Task 1)		
Group + Individual	Weighting: 70%	Magnitude: Equivalent to 3,500 words
Submission date/time: 18th December, 2025 at 3pm	Blackboard submission: Yes Turnitin submission: No	Format: Software Design artefacts, source code, word/pdf document, and video.
Planned feedback date: 19th January, 2026	Mode of feedback: Written via Blackboard	In-module retrieval available: No
In this assessment are students asked to consider:	Inclusivity and accessibility	Yes
	Sustainability	Yes
Module Learning Outcomes		
<ul style="list-style-type: none"> Describe key properties of software including its characteristics and qualities, and their measurement. Understand and discuss software development life cycles and processes. Explain the development of secure software and review the importance of information privacy in systems development. Understand the use of analytical approaches to decision making throughout the systems development lifecycle. Prototype a software application through planning, specification, design, implementation, validation, and verification, and reflect critically on experiences gained. 		
Indicative employability skills you will develop during this module: You will develop collaborative project management and agile development practices essential for modern software engineering roles, including experience with version control systems and team-based coding practices. You will also enhance your technical communication, critical thinking, and analytical skills through designing, testing, presenting, and iterating on software solutions for diverse stakeholders.		

Assessment Brief

Introduction

This assessment evaluates your ability to apply software engineering principles and practices in a collaborative setting. You will work in groups to design and develop a software solution, demonstrating the application of established agile methods within the software development lifecycle. The assessment is designed to help you integrate theoretical knowledge with practical implementation, reflecting on how software engineering processes support the production of high-quality, secure, and maintainable systems.

To ensure consistency and comparability across submissions, all students must base their work on the provided case study posted on Blackboard. This case study sets out the context, objectives, and initial scope of the system you are expected to design and prototype. While the core requirements are defined, there is room for innovation and creativity in how you approach, extend, or implement the solution.

In addition to technical considerations, you are expected to ensure that your solution is usable by a diverse range of users. You should also consider sustainability aspects of software engineering, including the efficient use of resources and the long-term maintainability of the system.

The Task

In this task, you will work collaboratively in groups to design and develop a software solution that demonstrates the application of software engineering methods and practices. Your work should show evidence of applying both traditional and agile approaches to software development, supported by appropriate design and testing techniques.

As a group, you are expected to:

- Plan and manage the project using appropriate software engineering methods.
- Document requirements using suitable techniques (e.g., user stories, use case models, or requirements specifications).
- Design the software solution using industry standards and best practices for design approaches and artefacts.
- Develop a working prototype that demonstrates core functionality.
- Test the solution using appropriate strategies (e.g., unit testing, acceptance testing, usability testing, security testing).
- Reflect on the project process, including group collaboration, application of agile practices, and how inclusivity, accessibility, and sustainability have been addressed.

Deliverables:

For this task, your group is required to submit the following:

1. **Software Prototype with Documentation** – a working version of the system that demonstrates the core functionality, accompanied by supporting documentation. This must include:
 - Requirements (4 user stories, use case models)
 - Design artefacts (C4 model diagrams, interface designs, data design diagrams)
 - Implementation notes (e.g., technology stack, setup instructions, repository link)
 - Testing documentation.

This assesses module learning outcomes 1,4 and 5

Note: All documented artifacts will be assessed primarily through their presentation and explanation in the video. Ensure all requirements, design decisions, and testing approaches are clearly demonstrated and discussed during the video presentation.

2. **Video Presentation** – details in the next section.
This assesses module learning outcomes 1,2,3,4 and 5
3. **Group Work Diary** – a record of task allocation and progress using the provided template.
4. **Peer Review Form** – completed individually by each group member, evaluating contributions to the project.

Each group member must submit all the above.

Video Presentation Breakdown

Your group must produce a video presentation of up to **30 minutes maximum** (approximately 7 minutes per student). We will stop watching after minute 30. All members of the team must contribute equally to the video. The presentation should be structured as follows:

1. **Introduction (2–3 minutes)**
 - Each team member introduces themselves and their role in the project.
 - Clear overview of the project aims.

2. Project Planning and Management (5 minutes)

- Description of how the project was organised and managed.
- Explanation of how agile methods (e.g., Scrum, Kanban) or traditional approaches were applied.
- Reflection on sprint planning and progress tracking.
- Evidence of how you evaluated and applied the formative feedback you received from your tutors. This feedback will be offered verbally during IT sessions from Week 1 to Week 12 only, therefore, it is crucial that you attend all these sessions. It is your responsibility to record any feedback in writing, noting the date and time.

3. Requirements and Design (7–8 minutes)

- Presentation of requirements using appropriate techniques (e.g., user stories, use case diagrams).
- Walkthrough of **architectural models and data models**, linking them to how they were implemented in the prototype.
- Justification of key design decisions.

4. Prototype Demonstration (6–7 minutes)

- Walkthrough of the working software prototype.
- Demonstration of how requirements and user stories were implemented.
- Showcase of major features and user interactions.

5. Testing (3–4 minutes)

- Overview of the testing process and methods used (e.g., unit testing, acceptance testing, usability testing, security testing).
- Presentation of outcomes, key results, and issues addressed.

6. Reflection on Legal, Social, Ethical and Professional Issues (LSEPI) (2–3 minutes).

- Identify three or more issues that specifically relate to your project, these could be:
 - GDPR
 - Reflection of how the solution accounts for diverse users.
 - Reflection on design decisions related to accessibility and sustainability.

7. Group Reflection and Collaboration (2–3 minutes)

- Reflection on teamwork and collaboration.
- Lessons learned from applying agile practices.
- Challenges faced and how they were addressed.

Notes:

- The **front camera must be on** during the presentation for verification purposes and so it is clear who is presenting each section. If you have any issues with this requirement, please contact the module leader to discuss alternative arrangements. If your laptop / computer is not equipped with a webcam, you can use one of the university laptops in the computer labs to do the recording.
- Introductions at the beginning must be clear.
- It is recommended to use a simple slide deck to guide and structure the video presentation.

Submission Instructions

All deliverables must be submitted through the Blackboard assignment submission point by the stated deadline.

Each student submission must include:

1. **Software Prototype with Documentation** – submitted as a compressed file (ZIP) containing the source code, supporting documentation (requirements, design artefacts) in a Word document, and a README file with setup instructions.
2. **Public Repository Link** – provide a link to a public repository (e.g., GitHub) where the project source code and documentation are stored. The repository should show evidence of contributions from all group members.
3. **Video Presentation link:**
 - Upload the video to YouTube, set the video to **unlisted**, and provide the link in your Blackboard submission.
 - OR**
 - Record the video with Panopto, create a share link (Change “**Who can access**” to **Your Organisation (unlisted)**), and provide the link in your Blackboard submission.

Note: Ask your team members to test the video link on another computer with your classmate before submitting to ensure your tutor can access it without logging into your account.

4. **Group Work Diary** – completed using the provided template.
5. **Peer Review Form** – each student must submit their own completed form using the provided template.

Group work

Recommended team size: 4

You should decide with your group members how tasks will be distributed during the early weeks of the module and record this in the Group Work Diary. Each student is required to contribute to different aspects of the project, including planning, design, implementation, testing, and presentation.

Active participation from all members is essential, and contributions will be cross-checked against the diary, repository activity, and peer review forms.

If you are unable to work in a group, or if your group becomes dysfunctional, you must inform one of the tutors as soon as possible so that appropriate support and arrangements can be made.

Artificial Intelligence and Academic Integrity

It is important you do not use AI tools to generate an assignment and submit it as if it were your own work. Our regulations state:

Contract cheating/concerns over authorship: This form of misconduct involves another person (or artificial intelligence) creating the assignment which you then submit as your own. Examples of this sort of misconduct include buying an assignment from an ‘essay mill’ or professional writer; submitting an assignment which you have downloaded from a file-sharing site; acquiring an essay from another student or family member and submitting it as your own; attempting to pass off work created by artificial intelligence as your own. These activities show a clear intention to deceive the marker and are treated as misconduct.

Further guidance is available here: <https://blogs.shu.ac.uk/assessment4students/preparing-to-submit-work>

AI Transparency Scale (AITS)

For this assessment, the permitted use of Artificial Intelligence is highlighted in the table below. All students are required to include a transparency declaration statement which can be added as an appendix to the assessment (not included in the word count)

SHU AI Transparency Scale (AITS)				
AITS	Descriptor	Transparency Statement	AI Contributions	Human Contribution
1	No AI	Artificial Intelligence (AI) has not been used for any part of the activity.	AI is not used for any part of the activity.	All aspects of the activity are human generated, created, edited, and developed.
2	AI for Shaping	AI has been used to shape the initial and/or final parts of the activity.	AI is used for shaping parts of the activity. This includes initial outlining, concept development, prompting thinking, and/or improving structure/quality of the final output.	Most of the activity is human developed/generated. AI ideas and suggestions are refined and reviewed. AI outputs are used for discrete and specific goals/outcomes.
3	AI for Developing	AI has been directed for enhanced development of concepts and outputs.	AI is used to undertake detailed development of many or most aspects of an activity and outputs of that activity.	The human takes a significant role in the enhancement, refinement, and critical review of AI generated elements, combining or curating for any outputs.
4	AI for Enhancing	AI has been implemented for all elements of the task.	AI is used extensively throughout the task to achieve goals and outcomes.	The human directs the use of AI for effective outcomes within an activity. Critical thinking is evidenced for any outputs.
5	AI for Innovating	AI has been used for all elements of a task or piece of work, and it has been used in new, creative, and innovative ways through advanced techniques.	AI is implemented in an advanced and innovative way throughout all aspects of the activity.	AI is used creatively and critically by the human. The human uses AI as a co-creator with a critical thinking approach to generating novel AI activities and outputs.

Transparency declaration statements

Your statement should:

- Indicate the AITS descriptor you are using.
- Briefly describe how AI was used (if applicable) or confirm no AI was used.

Please include this statement as an appendix in your assessment. Failure to comply with this requirement may be considered a breach of academic integrity under our Academic Conduct Policy

Grading criteria

Your work will be graded using the University's Grading Descriptor which is attached at the end of this task specification.

	Marks	At a pass level you will...	At a first-class level you will...
Software Prototype with Documentation	40	<ul style="list-style-type: none"> - Prototype implements at least 2 core system requirements. - At least 3 basic design artefacts included (e.g., Context, container, and 	<ul style="list-style-type: none"> - The prototype is functional, stable, and responsive. - Prototype implements 4+ core system requirements.

		<ul style="list-style-type: none"> component diagrams), but limited clarity or consistency. - Some aspects of the system are unclear or underdeveloped. - Basic use of a technology stack. - The repository is present but minimally structured or lacking meaningful comments. - Code runs with some issues. Repository contains minimal commits and lacks structure. README incomplete. - Limited evidence of testing. 	<ul style="list-style-type: none"> - Requirements and design artefacts are presented to a professional standard, addressing the key aspects of the system to meet the client's needs. - 5 or more professional-standard design artefacts (Architecture, ER diagram, UI wireframes) - Effective use of a modern, well-chosen system architecture and technology stack. - The repository is well-organised, with a professional README that enables others to understand and run the system. - Code is clean, modular, and documented. GitHub repository shows consistent activity across members (minimum 10 meaningful commits per student). - At least 5 documented test cases with results. Evidence of both functional and non-functional testing (e.g., usability, performance). - Evidence of innovation is demonstrated in design decisions, implementation, or functionality.
Video Presentation	40	<ul style="list-style-type: none"> - Basic presentation covering key areas (planning, design, prototype, testing) with limited clarity or depth. Some sections may be incomplete or poorly explained. - Basic design artefacts presented. - Basic demonstration of system functionality. - Limited discussion of Nonfunctional requirements and security measures - Some links are made between design artefacts and their implementation in the prototype. - Basic testing plan and minimal reflection on feedback. - Basic discussion of Legal, Social, Ethical and Professional Issues (LSEPI). 	<ul style="list-style-type: none"> - Clear, engaging, and professional presentation. - All sections (planning, design, prototype, testing, reflection) are well developed and presented in depth. - Diagrams are detailed, consistent, and well-explained in relation to the system. - Engaging demonstration of system functionalities - In-depth reflection on Nonfunctional requirements and security measures - Strong links are made between design artefacts and their implementation in the prototype. - Effective use of visuals and demonstrations, showing confidence and clarity. - Comprehensive testing plan with detailed evidence of testing - Insightful reflection on feedback and evidence of iterative improvements. - Insightful reflection on Legal, Social, Ethical and Professional Issues (LSEPI).

Group Work Diary	10	Diary provides a basic record of task allocation and progress, though some entries may be vague or lack reflection. Some evidence showing sprints utilisation, however formal scrum events are not evident.	Diary provides detailed, professional evidence of task allocation, progress, and challenges. Clear demonstration of equal participation, accountability, and engagement with the development process. Evidence of conducting two or more Sprints and conducting scrum formal events is clearly presented.
Peer Review	10	Peer review form submitted with minimal comments or limited justification for ratings.	Peer review form completed thoughtfully with constructive comments and detailed evaluation of contributions. Demonstrates fairness, critical reflection, and recognition of collaboration.

Note:

The individual grade For **Software Prototype with Documentation** criteria will be determined based on the peer review forms Submitted by the team. The calculation will be as follows:

Average peer review mark will be calculated for each team member

Team member	Average Mark out of 10
C B (10+10+10+10)/4	10/ 10
R A (10+7+8+8)/4	8.5/ 10
E M (6+5+4)/3 (one 0 review was ignored as it did not offer valid justification)	5/ 10
S M (1+0+1)/3 (one 10 review was ignored as it did not offer valid justification)	1/ 10

Imagine the final mark achieved by the group for **Software Prototype with Documentation** is 32 / 40. The calculation for every team member will be based on individual contribution recorded in the peer assessment form as calculated above.

Member	Calculation	Final Mark for Group Project
C B	$(10 / 10) * 32$	32
R A	$(8.5 / 10) * 32$	27.5
E M	$(5 / 10) * 32$	16
S M	$(1 / 10) * 32$	3.5

Level 5 - Generic grade descriptor: relationship of degree classification and equivalent percentage



Class	Category	Mark range	%	General Characteristics
1 st	Exceptional 1st	93 - 100	96	Exceptional breadth and depth of knowledge and understanding of the area of study, significantly beyond what has been taught in all areas ; evidence of extensive and appropriate selection and critical evaluation/synthesis/analysis and of reading/research beyond the prescribed range, in both breadth and depth, to advance work/direct arguments; excellent communication; performance beyond expectation. The ability to make decisions and carry out tasks/processes with autonomy; excellent leadership skills in group contexts; creative flair; extremely well-developed problem-solving skills; the ability to carry out sustained critical reflection on practical work within the wider context of industry/workplace. Fully meets expectations set by the industry/employment context.
1 st	High 1st	85 - 92	89	Outstanding/excellent knowledge and understanding of the area of study as the student is typically able to go beyond what has been taught (particularly for a mid/high 1st) ; evidence of extensive and appropriate selection and critical evaluation/synthesis/analysis of reading/research beyond the prescribed range , to advance work/direct arguments; excellent communication; performance deemed beyond expectation of the level. The ability to make decisions and carry out tasks/processes with autonomy; creative flair and the ability to (re)interpret predefined rules/conventions to select and justify individual working practice; highly developed problem-solving skills; accuracy and fluency; excellent command of skills appropriate to the task; the ability to reflect critically on practical work within the wider context of industry/workplace. Broadly meets expectations set by the industry/employment context.
	Mid 1st	78 - 84	81	
	Low 1st	70 - 77	74	
2.1	High 2.1	67 - 69	68	Very good knowledge and understanding of the area of study as the student is typically able to relate facts/concepts together with some ability to apply to known/taught contexts ; evidence of appropriate selection and evaluation of reading/research, some beyond the prescribed range, may rely on set sources to advance work/direct arguments; demonstrates autonomy in approach to learning; strong communication skills. Broadly autonomous completion of practical tasks/processes; ability to adapt in response to change or unexpected experiences; technical/artistic decision making is highly developed; a clear command of the skills relevant to the task/process; ability to reflect on practical work and set future goals within the wider context of industry/workplace. Adherence to standards set by the industry/employment context.
	Mid 2.1	64 - 66	65	
	Low 2.1	60 - 63	62	
2.2	High 2.2	57 - 59	58	Good knowledge and understanding of the area of study balanced towards the descriptive rather than analytical ; evidence of appropriate selection and evaluation of reading/research but generally reliant on set sources to advance work/direct arguments; communication shows clarity, but structure may not always be coherent. A confident approach to practical tasks; a solid grasp of the related processes, tools, technology; creativity in the completion of the task; proficiency is demonstrated by an accurate and coordinated performance; tasks are completed with a good level of independent thought; some autonomy is evident; an ability to reflect on practical work and set future goals. General adherence to standards set by the industry/employment context.
	Mid 2.2	54 - 56	55	
	Low 2.2	50 - 53	52	
3 rd	High 3rd	47 - 49	48	Knowledge and understanding sufficient to deal with terminology, basic facts and concepts but fails to make meaningful synthesis; some ability to select and evaluate reading/research however work may be more generally descriptive; strong reliance on available support set sources to advance work; arguments may be weak or poorly constructed; communication/presentation is generally competent but with some weaknesses. Competence in technical/artistic skills; tasks/processes are completed with a degree of proficiency and confidence; tasks are completed with a basic level of independent thought; effective judgements have been made; basic evaluation and analysis of performance in practical tasks is evident. Errors in workflow or completion of the task; general adherence to appropriate rules/conventions set by the industry/employment context.
	Mid 3rd	44 - 46	45	
	Low 3rd	40 - 43	40	
Fail	Borderline Fail	30 - 39	35	Insufficient knowledge and understanding of the subject and its underlying concepts; some ability to evaluate given reading/research however work is more generally descriptive; naively follows or may ignore set material in development of work ; given brief may be only tangentially addressed or may ignore key aspects of the brief; communication shows limited clarity, poor presentation, structure may not be coherent. Practical tasks are attempted; skill displayed in some areas; there are a significant number of errors; a lack of proficiency in most areas; guidance may be needed to reproduce aspects of the task and/or apply learned skills. Tasks may be incomplete; failure to adhere to some of the rules/conventions set by the industry/employment context.
	Mid Fail	20 - 29	25	
	Low Fail	6-19	10	No evidence of knowledge or understanding of the subject; no understanding of taught concepts, with facts being reproduced in a disjointed or decontextualised manner ; ignores set material in development of work; fails to address the requirements of the brief; lacks basic communication skills. A general level of incompetency in practical tasks; an evident lack of practice; set tasks are not completed; few or no skills relating to tasks are evident. No adherence to rules/conventions set by the industry/employment context.
Zero	Zero	0-5	0	Work not submitted, work of no merit, penalty in some misconduct cases.