Software Projects with Agile Techniques

Assignment 1

2023-24

Level 5

Assessment Information/Brief 2023-24

Module title	**Software Projects with Agile Techniques**
CRN	34129
Level	5
Assessment title	**Assignment One**
Weighting within module	This assessment is worth 20% of the overall module mark.
Assessment set by	Dr Gloria Iyawa
Submission deadline date and time	**4pm, Tuesday 7th November 2023** The submission deadline is 7th November by no later than 16:00. Any submission received after 16:00 (even if only by a few seconds will be considered as late). For coursework assessments only: students with a Reasonable Adjustment Plan (RAP) or Carer Support Plan should check your plan to see if an extension to this submission date has been agreed.
How to submit	You must submit a single document, in PDF format, via Blackboard. Zero (0) marks will be awarded for supplementary files or files in other formats. **Do not submit a zip file**. The name of your PDF file must include your family name, your student ID and your User name.

Assessment task details and instructions

Context

The aim of this assignment is to perform requirements analysis modelling for a software solution using the Unified Modelling Language (UML). You are presented with a business scenario where a software solution is sought to help provide services to users and allow future expansion. You are expected to use materials provided to you in the lecture series in the course plus information obtained from external sources for doing this assignment.

Scenario

A combined cycle gas turbine power station requires a web-based system to manage the storage and installation of spare parts and the acquisition of new parts from the Central Storage Warehouse (the CSW). The power station maintains an inventory of all the parts it owns comprising: part name, description and specification. There are many copies of some parts – each part has a unique ID, known as an asset tag number. The asset tag number is used when there is damage to particular parts. The power station also keeps a catalogue of all the possible spare parts types used.

Only registered maintenance engineers and team leaders are allowed to install and repair parts on the plant. Maintenance engineers and team leaders can use the parts catalogue to search for part types and can also search the parts inventory. Maintenance engineers work in teams, currently: electrical, mechanical and environmental. Each team has its own team lead. However, the system needs to be flexible enough to allow creation of new teams in the future.

Maintenance engineers are allowed to take spare parts from the CSW, up to a value of £50,000. Higher value items need authorisation from a team leader. Spare parts are issued from the CSW by a Store Manager.

Occasionally a maintenance engineer needs to sign parts back into the CSW. Such “returns” maybe because time has run out on the shift to install the part or because the part is no longer required.

Whenever a new part is installed in the power station an old part is removed. The old part must either be returned to the CSW for refurbishment or disposed of as scrap.

After store managers receive requisitions from team leaders,

they produce purchase orders to purchase spare parts from suppliers. The purchase orders contain part names and descriptions and are sent suppliers. Suppliers then send the spare parts along with an invoice to the CSW. The store managers then reconcile the invoices against the purchase orders to authorise payments for suppliers.

The store managers also handle spare parts returned to suppliers for refurbishment. When a spare part is returned to the CSW, the store managers produce a purchase order. Again, suppliers send refurbished goods (spare parts) to the CSW, where the store managers then reconcile invoices and authorise payments.

After the store managers authorise payments for suppliers, the payment transactions are actually implemented by the power station financial management system (FMS). A message passing interface is used to payment transactions. Each payment transaction must include: supplier name, address, phone number, email address, invoice number, order number, authorising store manager name and payment amount (in GBP).

Task

Your task is to:

- Produce a Use Case Model of the system. Your use case model should describe the users' view of interaction scenarios with the system and should include the following:
    - Read the scenario in order to identify and name the actors of the system.
    - For each actor you have found in the system, identify and name the use cases for the actor.
    - Use straight lines to show actor and use case relationships.
    - Indicate primary and secondary actors.
- Write textual use cases for TWO of the use cases you have identified. The use cases must include
    - Use Case Title
    - Primary Actor
    - Goal
    - Scope
    - Preconditions
    - Postconditions

- Main Success Scenario
- Extensions

- Draw a simple, high-level, UML class diagram of the system.
    - Use the class diagram illustrate various relationships between classes, such as inheritance, association and aggregation.
    - Show example method and attribute names in classes, (think about encapsulation, make sure methods go with the attributes encapsulated by the class)
    - Try to include method call and return parameters, where appropriate.

Report Format

Your report should include the following:

- Front Sheet – your full name, your student ID, your User name, date, the assessment title, the name of the module and its CRN.
- Use case diagram.
- Two textual use cases.
- Simple system class diagram.
- References – the sources used in your report (and cite them in the body of your report). You must use the APA 7th Ed (Harvard) style.

Your submission should be typed (rather than hand-written) in, at least, font size 12pt.

Recommended Reading

- There are useful reading resources in the module reading list.
- Software engineering - Sommerville, Ian, Pearson Education, 2015, 10th Edition, August 2015
- Fowler, M., Scott, K., 2002. UML Distilled: A Brief Guide to the Standard Object Modeling Language. Pearson Education (US), New Jersey.
- Cockburn, A., 2000. Writing Effective Use Cases. Addison-Wesley Professional.
- Module lecture notes.

Assessment Criteria	Explain how students can find information about assessment criteria. You should look at the assessment criteria to find out what we are specifically looking at during the assessment.
	Assessed intended learning outcomes On completion of this assessment, you will have had the opportunity to:
Knowledge and Understanding	A1 - derive a software specification and design from a brief user requirement using various UML modelling techniques such as activity diagrams class diagrams, data flow diagrams, state machines and interaction diagrams
Transferable/Key Skills and other Attributes	B1 - design and implement a software application, using appropriate class libraries, etc., documenting to a professional standard.
Employability Skills developed / demonstrated	**Critical Thinking and Problem Solving** **Creativity** **Reflection and Life-Long Learning** **Self-management and Organisation** **Attention to Detail**
Word count	Your report should be between 6 and 10 pages. The emphasis should be on report quality and not quantity.
Feedback arrangements	You can expect to receive marks and feedback within 15 working days of the published assessment submission deadline. Feedback will be made available via Grade Centre in Blackboard. An announcement will be made on Blackboard (and emailed to you) when feedback has been released.
Academic Integrity and Referencing	Students are expected to learn and demonstrate skills associated with good academic conduct (academic integrity). Good academic conduct includes the use of clear and correct referencing of source materials. Here is a link to where you can find out more about the skills which students need: Academic integrity & referencing Referencing

	Academic Misconduct is an action which may give you an unfair advantage in your academic work. This includes plagiarism, asking someone else to write your assessment for you or taking notes into an exam. The University takes all forms of academic misconduct seriously.
Assessment Information and Support	**Support for this Assessment** If you send me a query about this assessment via e-mail then I may respond by making an announcement via Blackboard so that the whole cohort can benefit from this answer. You can find more information about understanding your assessment brief and assessment tips for success here. **Assessment Rules and Processes** You can find information about assessment rules and processes in the Assessment Support module in Blackboard. **Develop your Academic and Digital Skills** Find resources to help you develop your skills here. **Concerns about Studies or Progress** If you have any concerns about your studies, contact your Academic Progress Review Tutor/Personal Tutor or your Student Progression Administrator (SPA). **askUS Services** The University offers a range of support services for students through askUS including Disability and Inclusion Service, Wellbeing_and Counselling Services. **Personal Mitigating Circumstances (PMCs)** If personal mitigating circumstances (e.g. illness or other personal circumstances) may have affected your ability to complete this assessment, you can find more information about the Personal Mitigating Circumstances Procedure here. Independent advice is available from the Students' Union Advice Centre about this process: https://www.salfordstudents.com/advice/centre
Reassessment	If you fail your assessment, and are eligible for reassessment, you may be required to do the same assessment again. The resit submission deadline will be in August. We know that having to undergo a reassessment can be challenging however support is available. Have a look at all the sources of support outlined earlier in this brief and refer to the Personal Effectiveness resources.