University of South Australia
UniSA STEM
INFT 1031: System Requirements Studio
SRS A2 Group Project

Length: 2000 words each or equivalent, **Weighting:** Pass/Fail,
Due Date: 1pm Monday 17th May

INSTRUCTIONS TO STUDENTS

This task has an individual and a group component.

Assignments will be returned to you within two to three weeks of submission.

Feedback on this assignment will be provided via a feedback form which will be available on the course website.

Please read the assessment summary and assessment details sections of your course outline booklet carefully for further information relating to assessment in this course.

SPECIFICATIONS

Individual Component

This component is part of the 2000 words required per team member.

1. Update and/or finalise your MyUserManual PowerPoint presentation that you worked on in workshop 3 for submission. Refer to the sample templates provided on the course website if you have not completed this activity.

2. Update and/or finalise your SRS: Review of Your Teamwork Skills worksheet that you completed in workshop 8 for submission. Refer to the worksheet provided on the course website if you have not completed this activity.

3. You are required to provide a 500 word reflection **(and word count)** on your experience of working in your team for this particular assignment. Things you should mention include:

    - What worked well?
    - What didn't work well?
    - How could you have improved things?
    - What were your strengths and weaknesses as a member of the team?
    - What were the strengths and weaknesses of the other individuals in your team?
    - Compare all of the above with your team experience throughout the course. Was it the same? If it was different, how did it differ?

4. You are required to provide the details of what you wrote and subsequently spoke about in your three group project stand-up meetings. These should be provided on three separate pages, clearly labelled, with each page showing your first, second and third set of stand-up meeting notes at an adequate level of detail. The following questions should be addressed for each stand-up meeting:

    - What have you done since the last workshop?
    - What do you plan on doing on the day of your next workshop?
    - What problems are preventing your progress on the group assignment?

Group Component

1. You are required to investigate and document system requirements for a given scenario.

2. The assignment should be created using the template provided on the course website.

3. Each team member is also required to fill out the "Declaration of Contribution" form which is available in the assignment template document. As stated in the form, if any contribution does not meet the assessment requirements, the course coordinator may adjust individual marks up or down, depending on the level of contribution made.

Marking Criteria

The feedback form that will be used when assessing your work will be available on the course website. The word limit will not be checked for this assessment. This task will assess completeness of the objectives listed below.

- Completeness, suitability and thoroughness of responses to the questions
- Technical correctness of the various models created;
- Adequate presentation and format;
- Use of the template provided;
- Correct spelling and grammar;
- Clarity of expression;
- Clearly labelled questions and answers;

To pass this assessment you must:

Individual Component

- Submit your MyUserManual
- Submit your SRS: Review of Your Teamwork Skills worksheet
- Submit your 500 word reflection
- Submit the details of your three stand-up meetings

Failure to submit any one of the above will result in a fail grade in this assessment and the course.

Group Component

- Complete the Declaration of Contribution form for each group member which is available in the assignment template document
- Submit the responses to the tasks for the given scenario using the template provided

Failure to submit any one of the above will result in a fail grade in this assessment and the course.

Refer to the feedback form for further details regarding passing and submission requirements.

Submission Instructions

Individual Component

The individual component **MUST** be submitted individually via Learnonline through the course website or via MyUniSA.

Include as part of your submission **TWO** documents containing the following:

- One PowerPoint (.ppt/.pptx/.pps) document containing your MyUserManual
- One .pdf document containing your SRS: Review of Your Teamwork Skills worksheet, your 500 word reflection and the details of your three stand-up meetings

Group Component

The group component **MUST** be submitted via Learnonline through the course website or via MyUniSA.

Please submit **ONLY ONE** assignment per group – nominate someone to submit the assignment on the group's behalf.

Include as part of your submission **ONE** .pdf document containing the responses to the tasks relating to the given scenario.

Individual submissions for this component will **NOT** be considered or marked.

Refer to your course outline for further information regarding extensions.

Late submissions for either component will not be accepted for this course unless an extension has been approved by the course coordinator (see section on extensions in your course outline for further details). Late submissions that have not been approved will receive a fail grade.

*****Important Information*****

It is up to each group to make sure that the submitted work does not contain any parts copied from another group in this or any previous year, from this or any similar course; or from a common source such as a textbook or website.

The assignment must be your own collective work, and not contracted to a substitute person. If we are suspicious, we reserve the right to call you in and to test your understanding of what you have submitted in an oral examination.

If plagiarism is detected it will be investigated and appropriate consequences will follow.

Important Notes:

- Justify and document any decisions and assumptions made.
- You **must** use the templates/layouts provided in the course notes for any answers, tables, models, diagrams or use case descriptions created. Diagrams must conform to the UML notation used in this course.
- Diagrams may be produced using a UML case tool or hand-drawn provided that they are legible and well laid out. It is the group's responsibility to ensure these are appropriately presented and incorporated into the document template.
- **DO NOT** include the scenario or question text in the document template. Use the template document as is. Do not modify any headings and include your responses in the area indicated.
- Post any questions in relation to the scenario or assignment on the SRS A2 Group Project Q&A Forum on the course website.

SEE NEXT PAGE FOR SCENARIO

SCENARIO

AAA Mechanics Ltd has tasked your team to develop the requirements for their vehicle mechanical service company system. The system is to allow the company to record client information – their details (for example name, address, contact details), vehicle details (for example make, model, colour, registration), and service history (for example service dates and odometer readings, details of the services performed separated into labour tasks and parts used, the mechanics involved). The system must also keep records of the mechanics employed by the company – their personal details, their qualifications and special licenses, time sheet information, emergency contact details, supervisor details.

The company has a pool of ten mechanics who are entitled to a rostered day off per fortnight and so the system must be able to produce a roster for the mechanics ensuring that there is always at least five mechanics working on a day and one mechanic available for emergency call in, in the event of illness or extra work demand. Mechanics can enter information into the system at any of five terminals to be placed in the workshop area; front office staff can enter information at any of two terminals in the front office; and roadway staff can enter details at an outside terminal on arrival of the client with their vehicle.

The company also provides loan cars to clients on request and so must keep information on when loan cars are available for clients and who has a loan car at any given time and for how long.

AAA Mechanics Ltd needs to manage an inventory of common parts and consumables that the mechanics use for jobs. Mechanics decrement the inventory as they use parts and consumables. The purchasing officer for AAA Mechanics Ltd needs to be able to check inventory levels at any time and order additional stock (typically via email to a supplier as necessary). However the purchasing officer should also receive a warning email if stock levels decrement below a threshold. The system should be able to handle up to 5000 part numbers (a consumable also has a part number) and the purchasing officer set the thresholds for the warning levels for each part as they require. A part or consumable has a name, a number, a supplier and a minimum order quantity.

AAA Mechanics Ltd has a finance manager who must be able to extract information related to car services and bills paid (clients pay the front office staff on completion of a job) as well as invoices paid to suppliers, for parts ordered by the purchasing officer. The finance manager prefers to use Microsoft® Excel® and MYOB® for accounting activities.

AAA Mechanics Ltd has a marketing manager who needs to be able to set up mail out reminders to clients when their car might be coming due for a service and any special offers. The marketing manager also likes to use Corel® Draw®, as well as Microsoft® Excel®.

There has been some consideration to giving mechanics a tablet computing device so that they can enter information more freely as they move around the workshop but there are concerns about the robustness of such devices (mechanics like to drop things) and the need for a local wireless area network – if possible this is desirable, but not mandatory.

AAA Mechanics Ltd has an IT administrator to maintain the system, perform backups and set access permissions, for example.

The team, apart from the IT administrator, finance manager and marketing manager are generally fairly IT illiterate and so need very simple user interfaces.

AAA Mechanics Ltd has a client base of 300 clients but is hoping to grow this by 10%.

SEE NEXT PAGE FOR TASKS

TASKS

1. GANTT CHART

a. Using any free online software, create a Gantt chart that represents how you will complete this assignment with all the information that you have available. Include the original/copy/photo/image/screenshot of the Gantt chart into the appropriate section of the assignment document.

2. TEAM DOCUMENTS

a. Update your Team Communication Plan and include it in the appropriate section of the assignment document.

b. Update your Team Charter and include it in the appropriate section of the assignment document.

c. Include the link to your Project Team Health Monitor that was carried out in Workshop 7 in the appropriate section of the assignment document.

d. Include the original/copy/photo/image/screenshot of the Retrospective that was carried out in Workshop 8 in the appropriate section of the assignment document.

3. MIND MAP

a. Using any free online mind mapping software, create a mind map of the scenario. Include the original/copy/photo/image/screenshot of the mind map into the appropriate section of the assignment document.

4. PROBLEM STATEMENT

a. Write a brief 4-5 sentences describing the problem the system is addressing.

5. STAKEHOLDERS

a. Identify the **project stakeholders** and the **system stakeholders** for the given scenario. Note that not all stakeholders are necessarily listed in the scenario.

b. For each of the system stakeholders, identify if they are **first degree**, **second degree**, or **third degree** stakeholders.

6. USER STORIES

a. Develop a set of **user stories** for the stakeholders identified in the previous task. Write the set of user stories in the form:

As a [role], I want to [goal] so that [benefit]

Ensure that your stories meet the **INVEST** criteria. Aim for at least 3-4 user stories per user.

7. GATHERING REQUIREMENTS

a. To collect information on the functional requirements for the system, what are some techniques that might be used?

b. If you were to conduct interviews, who would you interview?

c. Provide ten sample interview questions in total (five closed-ended and five open-ended) that you would ask to obtain the required information from one or a number of stakeholders. Ensure you obtain sufficient information to define use cases and create models.

8. FORMAL REQUIREMENTS IDENTIFICATION

a. Identify the **functional requirements** of the system. The functional requirements should be written in the form:

FR1. The system shall […]

Ensure your requirements meet the **SMART** criteria.

b. Identify the **non-functional requirements** of the system. Categorise the non-functional requirements by using the URPS+ criteria. The non-functional requirements should be written in the form:

NFR1. The system must […]

Ensure your requirements meet the **SMART** criteria.

c. **Prioritise** your functional and non-functional requirements using a method of your choice. Order your requirements by your prioritisation method and describe which method you used to prioritise the requirements.

9. USE CASES

a. Identify all the actors that will be using the system.

b. Using the actors you just identified, develop a list of use cases for each actor.

c. Draw a use case diagram for the system representing the actors and use cases identified.

10. USE CASE MODELLING

a. Write a fully developed "sea level" use case description for the use case *Book Car Service*. Ensure you follow the format for use case descriptions presented in your System Requirements and User Experience course.

b. Develop an activity diagram for the use case *Book Car Service*. Identify the diagramming tool you used to develop the activity diagram.

11. DOMAIN MODELLING

a. List the domain classes for the system and their attributes.

b. Based on the domain classes identified, develop a domain model class diagram showing domain classes with attributes, primary keys, relationships, and multiplicity constraints.

c. Associations are the naturally occurring relationships between classes. They apply in two directions and can be read separately each way. For example, two classes called Customer and Order could have the following associations:

- A Customer can place zero or more Orders.
- An Order must be placed by exactly one Customer.

List all of the associations (in both directions) between the classes for the domain model in part b using the format specified above.