Software Engineering Group Project

Stage 2 ("Final Product")

This document describes Stage 2 of the Software Engineering Group Project and should be read in conjunction with the Group Project Guide, the Project Specification, and the Group Project information posted on Canvas. Stage 2 will count for 36% of the Group Project mark.

Overview

In the final stage, the group is expected to complete the product, produce a final report documenting and evaluating the project, and demonstrate the final developed application. Your group should aim to produce an application worth one course worth of effort, which is user-friendly and reasonably robust. The final applications will be demonstrated at an Expo event near the end of the process. Marks for Stage 2 will be determined both from the documentation and the demonstration.

Stage 2 specification

For Stage 2, you should produce the following outputs and a report as described below.

1. Marketing Strategy and Materials

Produce a short marketing strategy for your application. The precise details are up to your group, but you should think about the market and stakeholders for your product and your application's unique selling point (USP). Support your strategy with any relevant data (e.g., market size analysis, product advantage over competitors, product placement, etc.). You should also produce simple marketing materials (e.g., website updates, logos, flyers, posters, etc.). The details of your strategy and your marketing materials should be included in your report and highlighted during the final product demonstration (see below).

2. Final Application Design and Implementation

Produce a report presenting your progress in Stage 2 and details of the final version of your system. Your report should reflect one course's worth of effort on the development of the application. The report should contain:

- An overview of the final system, including a high-level description of the application's core technologies and system components and how they're connected.
- A detailed description of the final system design, including an update on the final state of project requirements and implemented features. Include, if relevant, supporting dataflow

diagrams, UML diagrams, class diagrams, etc. It is okay to have a few features unimplemented rather than having a full set of implemented features with significant flaws; these issues should be discussed in your report.

- A description of the final Interface design, including the layout and navigation of the application.
- A discussion of your implementation methodology (e.g., Scrum, other agile techniques, etc.) with details on what was achieved during each development iteration/sprint.
- A summary of how you tested system components and the final overall system for technical correctness.
- Documentation on how to install/setup/maintain the final system and a short user guide.

3. Final Usability Evaluation

Perform a final usability evaluation of your product, similar to the one you conducted in Stage 1, but using the full system. Again, try to get at least 6-8 participants for this study and think of tasks and questions that assess the full set of features you have implemented (don't just use SUS). Try to collect both subjective data (e.g., what the user thinks/says) and objective measures (e.g., number of successful tasks, time to completion). Refer to the Stage 1 specification and the Usability page on Canvas for more details on what to include in your evaluation. Note that this evaluation is different from the final product demonstration, where you will be showing off the product, not collecting data to evaluate usability.

4. Project Evaluation

Assess the project as a whole and include recommendations for the future. Include the following categories and address (at least) the topics listed below:

Organisation

- How was your group organised? Was it successful?
- How well did your group collaborate? How did you handle any problems that arose?
- How successful were the timings in your original project plan?

Implementation

- What was your implementation schedule and how did this differ from the original plan?
- Was your implementation approach successful (e.g., Scrum, other agile, etc.)? Why or why not?
- Which languages, tools, and techniques did you use? How suitable were they?

Product

- How many of your requirements did you meet? E.g. you could also provide a table showing to what extent each of your numbered functional requirements has been completed.
- What is particularly special about your product? Have you included extra features?
- How robust is your final system? Are there known bugs or constraints?
- How usable did your subjects find the final system? Include a brief summary of your results.

In each category, use specific examples from your experiences to support your discussion. The "Product" section should give a summary report that focuses on the functionality you achieved, different from the technical details you have included in the "Final Application Design and Implementation" sections of the report.

5. Appendix of Supporting Documentation

Include any other supporting documentation you think is relevant in an appendix. This could include project diaries/reports, original implementation plans, marketing material, etc.

6. Professional Conduct

Your Manager will also assign your group a mark based on how well the group conducted itself during meetings when interacting with staff, in correspondence, etc. The Manager will be looking to see that group members acted respectably to their peers and staff, met deadlines, attended meetings and were punctual, acted on feedback, and generally conducted themselves in a professional manner.

7. Final Product Demonstration

Near the end of Stage 2, you will demonstrate your product to your Manager and the Project Coordinator or another Manager in an Expo-style event. This is a chance to show off your product and demo the features you have implemented. The demonstration should be no more than 30 minutes long (and can be shorter) and could be similar to the demo you gave during Stage 2. Your demo should capture key aspects of the product, including:
- A brief introduction of who you are and what you did on the project.
- Information about the company and an overview of the application.
- A high-level system architecture so that participants can see what the system components are and what software you are using.
- The main demonstration itself focuses on key features of the application. Don't labour over things like logging in and lots of data entry. Make sure you describe what works and what doesn't work with respect to your product and project plan. Include a good set of test cases/data that showcase the features.
- Details of your marketing strategy and any marketing materials you've produced.
- Other useful information you think might help understand your product or your approach.

Assessment of the demo is based on the quality of the demonstration and your software so you should practise your demo in advance. Each person should take part in the demonstration. Members of the group should run through the demo using a prepared plan of events, aimed at showcasing key features. There could also be some audience participation, where the markers ask for certain features to be demonstrated. The markers may try the software directly, if this is possible. You may also want to design an overview document or a poster to distribute, showing the system architecture, your requirements, and what has been achieved.

It's important to have a plan for the demo. Prepare the examples. Ensure that you focus on the most interesting parts. Rehearse your demo and time yourself. At the end, there may be questions. Be prepared to show the source code and explain how various functionalities are implemented.

Finally, be professional! Remember that your application is meant to reflect one course worth of effort, and the demo is the most effective means of illustrating the work you have done as a group.

Structure of the Expo: In past years, we have run an Expo event where each team sets up a booth to demonstrate their final products to the Managers, Project Coordinator, invited industry guests, and other students. Details on the structure of the Expo event will be communicated to students closer to the event date.

Stage 2 Report Structure

When writing the final report, ensure you follow the same style you established in Stage 1. Use a similar style of title page and include the document subject, your group name, Manager name, and names of students in the group. Include a table of contents in your report. Include a URL to your company website in your report. Remind yourself on what you included in previous reports and make sure you are consistent. Make sure you get the terminology right. Refer to the F29SO lecture on Reporting for guidelines on writing your reports. You are aiming to submit a single integrated report with appropriate sections, subsections, and appendices, rather than a collection of reports on each of the topics that you have bundled together. Keep the length of your report to a maximum of 75 pages, not including appendices.

Deadlines and submission

Submit your completed Stage 2 report on the Canvas site for F29SO, with only one report submitted for each team. Check Canvas for the deadline for Stage 2, keeping in mind the submission time is campus dependant. The Expo may be scheduled for a different day/time from the Stage 2 reporting deadline.

Assessment

The Software Engineering Group Project contributes to both your Software Engineering (F29SO) and Professional Development (F29PD) marks. Your F29SO and F29PD marks will each include individual coursework from the particular course (weighted at 34%) and your individual Group Project mark (weighted at 66%).

This coursework contributes to the Group Project mark and will make up 45% of the group's overall mark (before individual adjustments). Stage 2 will be marked by both the Project Coordinator (with the exception of the Professional Conduct and Final Product Demonstration) and your Manager. The Project Coordinator or another Manager may mark the Final Product Demonstration. A peer assessment by other groups could also be used. Stage 2 will be marked out of **280 marks** using the following mark distribution and assessment criteria.

Criteria	Poor	Adequate	Excellent
Marketing Analysis and Strategy (out of 20 marks)	**0 to 7 marks** Minimum or no marketing strategy or materials. No understanding of the beneficiaries and stakeholders. Marketing strategy not original and not tuned to the product. No USP defined.	**8 to 13 marks** Some marketing strategy and materials but further detail needed. Some understanding of the beneficiaries and stakeholders but marketing strategy not well targeted. USP unclear.	**14 to 20 marks** In-depth marketing strategy and materials with well referenced statistics and market size. In-depth understanding of the beneficiaries and stakeholders. Much effort, enthusiasm and ingenuity with regards the marketing strategy which is well targeted. Well defined USP.
Final Application Design and Implementation (out of 100 marks)	**0 to 49 marks** Poor high-level overview of the system. Very limited description of the design of the final system with many details missing. Overview of the final interface design but with some serious usability issues. Inadequate or no test plan. Group has produced an application not worthy of a course worth of effort. The	**50 to 69 marks** Reasonable high-level overview of the system including the various components. Design of the final system adequate but with some details missing. Overview of the final interface design is reasonable but with some usability issues. Adequate testing plan. Group has produced an application not quite worthy of a course	**70 to 100 marks** Clear high-level overview of the system including the various components. Detailed design of the final system including, e.g., UML diagrams, class diagrams etc. Overview of the final interface design including layout/view connections having high usability. Overview of development processes adopted,

	0 to 7 marks	8 to 13 marks	14 to 20 marks
	system is not robust with serious usability issues remaining and not interactive.	worth of effort. The system is reasonably robust but with perhaps some usability issues remaining or not very interactive. Most components have been covered per the specification but with limited functionality.	e.g., iterations/SCRUM. Excellent testing plan. Group has produced an application worthy of one course worth of effort. The system is robust with high usability and interactivity. All major components have been developed per the specification and perhaps some additional features.
Final Usability Evaluation (out of 20 marks)	A study evaluating final product usability but with some aspect which is either unethical or the mock-ups have not been given adequate thought. Experimental protocol is flawed in some way or did not include the use of a consent form. Questionnaires may contain questions that are leading, ambiguous or unethical. Limited discussion of findings and recommendations	A reasonable study evaluating final product usability but perhaps not completely thought through with respect to design. At least 6-7 subjects recruited with a good experimental protocol followed including the use of a consent form. Questionnaires may include questions that are leading or ambiguous. Some findings and recommendations given. Limited use of descriptive statistical	A well run, ethical study evaluating well thought through interface mock-ups. At least 6-7 subjects recruited with a sound experimental protocol followed including the use of a valid consent form. Questionnaires are either a standard or include questions that are well thought through and without leading or ambiguous questions. A table of findings and recommendations is given, along with a discussion on which

	given. No use of descriptive statistical measures. Data not anonymised.	measures.	ones to take forward. Some descriptive statistics used to describe the subjects' demographics and subjective data.
Project Evaluation (out of 20 marks)	**0 to 7 marks** Marks are given for how well the group ran the project but also marks are given for reflection as written in the project evaluation section. (1) The group did not organise itself well, with little collaboration and problem-solving. (2) Poor use of project management tools and techniques resulting in many project management issues. (3) Most of the initial user requirements remain unfulfilled. If requirements are not fulfilled the reasons given are inadequate and reflect poor group performance. Poor or few supporting documents.	**8 to 13 marks** Marks are given for how well the group ran the project but also marks are given for reflection as written in the project evaluation section. (1) Group organised itself reasonably well with some collaboration and problem-solving. (2) Good use of project management tools and techniques but having some project management issues. (3) Medium level of functionality achieved. Most of the initial user requirements were fulfilled. If requirements are not fulfilled, the reasons given are reasonable. Some supporting documents.	**14 to 20 marks** Marks are given for how well the group ran the project but also marks are given for reflection as written in the project evaluation section. (1) The group organised itself very well, with good collaboration and problem-solving. (2) Excellent use of project management tools and techniques resulting in a well-run project. (3) High level of functionality achieved. The majority of initial user requirements were fulfilled. If requirements are not fulfilled the reasons given are reasonable. Excellent supporting documents.

Professional Conduct (out of 20 marks)	0 to 7 marks The group did not conduct meetings in a reasonably professional manner. Did not work well together nor act respectfully to their peers and staff. Issues meeting deadlines and collaborating with peers. Not punctual to meetings. Did not act of feedback.	8 to 13 marks The group conducted meetings in a reasonably professional manner. Worked reasonably well together and acted respectfully some of the time to their peers and staff. Perhaps some issues meeting deadlines and collaborating with peers. Not always punctual to meetings. Acted on some but not all feedback	14 to 20 marks The group consistently conducted meetings in a professional manner. Worked well together and acted respectfully to their peers and staff. Met deadlines and were punctual to meetings. Responded well to feedback.
Final Product Demonstration (out of 100 marks)	**0 to 49 marks** Poor demonstration. The demo talk is not well prepared or rehearsed, missing essential details about the company and product, or is outside the time limit. Product demonstration not well organised or missing content from the Stage 2 description (introduction, architecture, key features, etc.), poor evidence of	**50 to 69 marks** Adequate demonstration. Demo talk reasonably well prepared and rehearsed, some details about the company and product possibly missing, or minimally outside the time limit. Product demonstration reasonably well organised, some content from the Stage 2 description possibly missing (introduction,	**70 to 100 marks** Excellent demonstration. Well prepared and rehearsed demo talk outlining the company and product, presented within the time limit. Product demonstration is very well organised with all content specified in the Stage 2 description (introduction, architecture, key features, etc.). Strong evidence of

	marketing strategy or additional marketing materials not available, some team members did not take part.	architecture, key features, etc.). Evidence of marketing strategy with marketing materials possibly available. Most/all team members take part.	marketing strategy and additional marketing materials available. Most/all team members take part.

Feedback

Written feedback will be provided to the group approximately three working weeks after the submission/completion of Stage 2. Your Manager may also provide additional verbal feedback to the group.

Learning Objectives, Late Submission of Coursework, Mitigating Circumstances, and Plagiarism

Please refer to the **Group Project Guide** for information about the learning objectives for the Group Project and details on the relevant course/university policies. These policies are also posted on Canvas. You are responsible for reading and understanding these policies for completing the project.