SOEN 384 Fall 2020 D1 instructions

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SOEN 384
Delivery #1 Instructions

Type: Group Assignment

Outcomes: Two reports should be submitted per group.

1. **SRS-Written report**
2. **Postmortem - Written report**

Evaluation: 8.5 % of the final mark

Submission: Electronic Submission through Moodle course homepage. Create one zip file that includes the two reports, your file should be called *D1_TeamID*, where *TeamID* is your team name from Moodle.

Introduction

For this delivery, you will play the role of the requirements engineer. Your job is to write a formal specification following the best practices discussed in class. The software project is a Smart Home simulator. The following document will provide you an overview of the features desired by the customer (click the following link).

Description of tasks involved in the assignment

This assignment has 2 main tasks that are all to be performed in your assigned team of Moodle. The purposes of the tasks are to give you hands-on practice software engineering requirements elicitation, specification, and prioritization. We also require you to do a postmortem analysis of the techniques you used and to evaluate your work and processes. Below the description of each task:

Task 0 - Logging

During all of the work you do on this assignment you must log how much time you spend on each activity and which person(s) in your group does what. Your log should be added as an appendix to your post mortem report described below.

Task 1. Requirements specification
You shall document the elicited requirements in a software requirements specification document (SRS). Use *The Seven Sins of Specifier* [Meyer, 1985] Appendix A. as a model of good writing. Your document must adhere to the following template.

SRS template

Project: Smart Home Simulator

[Note: Text enclosed in square brackets and displayed in blue italics (style=InfoBlue) is included to provide you guidance and should be deleted before submitting the document.]

1. Introduction

[State purpose of the SRS document and describe the purpose of the project/software solution]

2. Positioning

2.1. Problem Statement

[Provide a statement summarizing the problem being solved by this project. The following format may be used:]

The problem of	*[describe the problem]*
Affects	*[the stakeholders affected by the problem]*
The impact of which is	*[what is the impact of the problem?]*
A successful solution would be	*[list some key benefits of a successful solution]*

2.2. Product Position Statement

[Provide an overall statement summarizing, at the highest level, the unique position the product intends to fill in the marketplace. The following format may be used:]

For	*[target customer]*
Who	*[statement of the need or opportunity]*
The [Project Name]	*is a [product category]*
That	*[statement of key benefit; that is, the compelling reason to buy]*
Unlike	*[primary competitive alternative]*
Our product	*[statement of primary differentiation]*

[A product position statement communicates the intent of the application and the importance of the project to all concerned personnel.]

3. Stakeholder Descriptions

3.1. Stakeholder Summary

Name	Description	Responsibilities
[Name the stakeholder type.]	*[Briefly describe the stakeholder.]*	*[Summarize the stakeholder's key responsibilities with regard to the system being developed; that is, their interest as a stakeholder.* *For example, this stakeholder: ensures that the system will be maintainable ensures that there will be a market demand for the product's features monitors the project's progress approves funding and so forth]*

3.2. User Environment

[Detail the working environment of the target user. Here are some suggestions:

Which system platforms are in use today?

Future platforms?

What other applications are in use?

You can extract information about main users of smart home simulators from the following websites:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5469526/

https://www.sciencedirect.com/science/article/pii/S1877050918316533

]

4. Product Overview

4.1. Product Perspective

[This subsection of the **SRS** document puts the product in perspective to other related products and the user's environment. If the product is independent and totally self-contained, state it here. If the product is a component of a larger system, then this subsection needs to relate how these systems interact and needs to identify the relevant interfaces between the systems. One easy way to display the major components of the larger system, interconnections, and external interfaces is with a block diagram.]

4.2. Assumptions and Dependencies

[List each factor that affects the features stated in the **SRS** document. List assumptions that, if changed, will alter the **SRS** document.

For example, an assumption may state that a specific operating system will be available for the hardware designated for the software product. If the operating system is not available, the **SRS** document will need to change.]

Assumptions	Dependencies
[state any assumptions]	

4.3. Needs and Features

[Avoid design. Keep feature descriptions at a general level. Focus on capabilities needed and why (not how) they should be implemented.]

Need	Priority	Features	Planned Release
[State a need]	*[Set priority:* *High, Normal, Low]*	*[Name the feature]*	

4.4. Alternatives and Competition

[Identify alternatives the stakeholder perceives as available. These can include buying a competitor's product, building a homegrown solution, or simply maintaining the status quo. List any known competitive choices that exist or may become available. Include the major strengths and weaknesses of each competitor as perceived by the stakeholder or end user.

For example, a commercial tool can be found here:

https://realgames.co/home-io/

See section 2.1 to 2.3 of this paper, to see another existing solutions]

5. **Other Product Requirements**

[At a high level, list applicable standards, hardware, or platform requirements; performance requirements; and environmental requirements.

Define the quality ranges for performance, robustness, fault tolerance, usability, and similar characteristics that are not captured in the Feature Set.

Note any design constraints, external constraints, or other dependencies.

Define any specific documentation requirements, including user manuals, online help, installation, labeling, and packaging requirements.

Define the priority of these other product requirements. Include, if useful, attributes such as stability, benefit, effort, and risk.]

6. Functional requirements

[Provide detailed use cases organized by feature, following the table below]

6.1 .. 6.N, where N is the total number of features

Use case name	Start with a verb
Level	“User-level” or “subfunction”
Brief description	summary of the use case
Preconditions	What must be true at the start, and worth telling the reader?
Triggering event	Stimulus
Main flow	A typical, unconditional happy path scenario of success.
Extensions	Alternate scenarios of success or failure.
Postconditions	What must be true on successful completion, and worth telling the reader?

Task 2 - Post mortem

You should conduct a post mortem analysis of the software requirements engineering activities and the whole project of your group assignment. The post mortem should be reported in a separate document from your SRS. It should, in detail, answer the following questions:

1. Show all the steps in time, describe what they constituted and the motivation for taking that step at that point of your overall process.
2. Based on the process description from question 1 and the detailed logging information you should summarize how much time was spent (in total and by each group member) on the

steps/activities involved as well as for the project as a whole? Note that this information will in no way be used for any grading; you do not even know if we think being more efficient (doing more in less time) is better or worse than being more effective (having a better resulting SRS).
3. What went right during the assignment that you should repeat next time?
4. What went wrong that you should avoid next time?
5. What didn't you do this time that you should consider in a future assignment?

Evaluation Criteria

Knowledge/correct specification of requirements:	50 points
Compliance of solution with template	25 points
Documentation:	15 points
Professionalism, Ethics and Equity:	10 points

Total 100 points

Appendix A. Origin of the requirements misinterpretations:

Meyer's Seven Sins of Specifier

Noise	*The presence in the text of an element that does not carry information relevant to any feature of the problem.*
Silence	*The existence of a feature of the problem that is not covered by any element of the text.*
Over-specification	*The presence in the text of an element that corresponds not to a feature of the problem but to features of a possible solution.*
Contradiction	*The presence in the text of two or more elements that define a feature of the system in an incompatible way.*
Ambiguity	*The presence in the text of an element that makes it possible to interpret a feature of the problem in at least two different ways.*
Forward Reference	*The presence in the text of an element that uses features of the problem not defined until later in the text.*
Wishful Thinking	*The presence in the text of an element that defines a feature of the problem in such a way*

that a candidate solution cannot realistically be validated with respect to this feature.