SWE30010 Development Project 2: Design, Planning and Management

01 – 07 All Pass Tasks for Project Proposal [2.1–2.2, 3.1–3.2, 4.1–4.3]

This document describes all pass tasks related to the Project Proposal stage done by you alone as an individual and your team as a group. It gives you an overview of all such pass tasks and how they are related to each other. You need to register your team (3 – 4 students in the same tutorial) in Doubtfire as one of the many "Project Proposal groups" for group submission. More details about the submission requirements will be discussed later.

What constitute a Project Proposal: There are many aspects of a project proposal. You can easily find many different project proposal templates online. For the purposes of DP2, we focus on the following three aspects, one on each week:

a. Scoping and Product Backlog (Planning aspect of DP2)
b. Solution Direction and Solution Design (Design aspect of DP2)
c. Quality of the product to be developed (Planning and Managing the quality of the software product being developed)

Suggested Time Frame: Weeks 1 – 4

Start:	Week 1 (after lecture)
Feedback:	Ask Tutor in Weeks 2 - 4 Tutorial class
Due [2.1 and 2.2]:	Week 3, Mon (Mon, Wed class) / Wed (Fri class)[1], 9:00am
Due [3.1 and 3.2]:	Week 4, Mon (Mon, Wed class) / Wed (Fri class), 9:00am
Due [4.1, 4.2 and 4.3]:	Week 5, Mon (Mon, Wed class) / Wed (Fri class), 9:00am

Overview

You are going to develop a project proposal of a software product based on its description provided by a client. The tasks consist of both individual work as well as group work.

For the individual tasks, you need to do them as individual and submit the relevant documents as individual work.

For the group tasks, you need to form a team of 3 – 4 people in your tutorial and work as a team for these group tasks. After that, you need to organize yourselves so that a person in your team will be responsible for submitting the relevant documents to Doubtfire

Purpose:	To practise how to develop a project proposal of a software based on its description
Tasks:	**Scoping and Product Backlog** **Individual [Pass Task 2.1]** 1. Develop the scope of a software project 2. Develop the product backlog of a software project **Group [Pass Task 2.2]** 3. Finalize the scope and the product backlog with the team **Design** **Individual [Pass Task 3.1]** 4. Develop a solution direction of a software project 5. Develop a high-level design of a software project **Group [Pass Task 3.2]** 6. Finalize a solution direction of a software project via a gap analysis 7. Finalize a high-level design of a software project **Quality** **Individual [Pass Task 4.1]** 8. Develop the quality requirements of a software project

[1]Although the submission date set on Doubtfire is Wed of that week, the actual submission due date for Wed tutorial class is Monday whereas that for Friday tutorial class is Wed.

Purpose:	To practise how to develop a project proposal of a software based on its description
	Group [Pass Task 4.2] 9. Finalize the quality requirements of a software project **Project Proposal, Group, [Pass Task 4.3]** 10. [Group] Finalize a project proposal of a software project
Pre-requisite Task[2]	Nil
Follow-up Task[3]	Pass Tasks in Sprint #1
Resources:	Lecture on Scoping Lecture on Scrum - Product Backlog 01_R_PHP_SRePS_RFP.pdf 01_R_Product_Backlog_Template.docx Lecture on Software Design 03_R_Design_Template.docx Lecture on Software Quality 05_R_Def_Done_Template.docx 07_R_Project_Proposal_Template.docx
Feedback:	Ask your tutor for feedback

Submission Details and Assessment Criteria

[Individual Tasks]
You must create your own document (pdf) in **portrait** mode[4], which you will upload to Doubtfire, with the following details:

- Your name and student id
- Your tutorial's time (e.g. Wed 8.30 or Fri 14.30)
- Your tutor's name
- Details (name and ID numbers) of your team members, if any
- Your own responses to the following tasks according to the corresponding instructions (see below)

[Group Tasks] Each group needs to create a document (pdf) in **portrait** mode. You need to organize yourselves so that a person in your team will be responsible for uploading the document to Doubtfire, with the following details:

- Your names and student IDs
- Your tutorial's time (e.g Wed 8.30 or Fri 14.30)
- Your tutor's name
- Your group responses to the following tasks according to the corresponding instructions (see below)

Remember, whoever submits the document the latest will overwrite the previous submissions. Since Doubtfire does not keep the previously submitted documents, the previous submissions will be gone forever.

Background
You have been tasked to develop a project proposal for PHP-SRePS (Read PHP-SRePS-RFP.pdf) using Scrum process. Here are your constraints in your project using Scrum.

	For DP2 purposes	In Real Life
Team Size	3 – 4 students within the same tutorial	Depends on the actual project
Number of sprints	2	As many as needed
Sprint duration	2-week sprint	"2–4"-week sprint

[2]You (as a group) need to complete the pre-req (pre-requisite) task before doing this task.
[3]You (as a group) need to complete this task in order to do the follow-up task because the follow-up task depends on your answer in this one. Strongly suggest you keep the same group if possible. Do the follow-up tasks before the next tutorial and then ask feedback in the tutorial.
[4]Landscape mode pdf does not work properly in Doubtfire.

	For DP2 purposes	In Real Life
Working hours	8 hours per person per week	40 hours per person per week
Daily stand-up	5 minutes per day via communication tools (e.g. Slack, Skype or even SMS)	5 minutes per day via face-to-face interaction in the office

Tasks and Instructions

0. Read the document "PHP-SRePS-RFP.pdf" before performing the following tasks.

Pass Task 2.1 Scope and Product Backlog

1. [**Individual Task**] Develop a scope for the project for PHP-SRePS
   Write, in your own words, a short paragraph to summarize what the software is capable of doing.

2. [**Individual Task**] Develop the Product Backlog
   Assume you are the product owner. Your first task is to develop the Product Backlog. Complete the following Product Backlog table for the software application so that it has 10 – 15 backlog items that you think are most suitable for your client.

   Note: These backlog items must be realistic because you will be developing these features in your Sprints #1 and #2.

Product Backlog (An example)

No.	Item	Dependencies	Business Value (1 least – 10 most)	Release Schedule (Sprint #1 | 2 | 3 | …)
1	Add a sales record		6	Sprint #1
2	Edit a sales record	1		
3	Display a sales record	1		
4	Display monthly sales report	1	8	
5	Predict the sales of an item on a monthly basis	1	9	
6	Predict the sales of a group of similar items on a monthly basis	1	9	
7	Generate a monthly sales report as a CSV file	1	8	
8	<< add some more here >>			
9	…			
10	…			
…				

Individual Submission: Once completed, you need to submit your Scoping and Product Backlog to Doubtfire as individual work. See "01_R_Product_Backlog_Template.docx"

Pass Task 2.2 Scope and Product Backlog

1. [**Group Task**] Form a team of 3 – 4 students within your tutorial, call this team your Project Proposal team.

2. [**Group Task: 30 – 60 minutes**]
   Discuss with your Pass team to finalize the scope and the product backlog items for the project.

   After the discussion, you need to write down your group's final decision **AND** your own explanation on what you agree and/or disagree with the group's recommendations. Then submit the required document to Doubtfire.

Note: Your group will be using this as your product backlog for future project tasks.

Group Submission: Once completed, your team need to submit the group's final decision on the scope and the product backlog of the project. Also included are individual member's comments (one – two paragraphs) on whether they agree with the final decision with reasons (i.e. why you agree or disagree with the group).

Pass Task 3.1 Solution Direction and Design

1. [**Individual Task**] Suggest one solution direction (e.g. Web based application with particular technology or desktop-only application) for the PHP-SRePS project. Things to be considered
   a. Problem domain
   b. Solution domain
   c. Your knowledge in the related business (e.g. daily operations in a pharmacy store)
   d. Your knowledge and experiences in the programming skills (e.g. Web app using xAMP and Web apps using WebAPI are considered to be different skills)

   Note: Remember to be honest to yourself and your team so that others can help. Software development is a team work not individual heroic behaviour.

2. [**Individual Task]** Propose a high-level design of the PHP-SRePS software project indicating each tier as well as their roles and responsibilities

   Note: You may need to draw a rough diagram for the design and briefly describe the roles and responsibilities of each component in your diagram.

Individual Submission: Once completed, you need to submit your Scoping and Product Backlog to Doubtfire as individual work. See "03_R_Design_Template.docx"

Pass Task 3.2 Solution Direction and Design

1. [**Group Task**] For the PHP-SRePS project,
   a. Suggest two different solution directions (e.g. Web based application or "desktop-only" application)
   b. Perform a gap analysis (e.g. KoST) to compare these two solutions (you need to detail your reasoning as your justification for c below). Things to be considered may include, but not limited to, the following:
      i. Problem domain
      ii. Solution domain
      iii. Team members' knowledge in the company / business
      iv. Team members' experience in the programming language, skills, API, database server used etc.
      v. Any similar software / competitors
   c. Choose one as your proposed solution direction and justify your choice

2. [**Group Task**] Based on your chosen solution direction in 3 above,
   a. Develop a high-level design (aka architecture diagram) indicating each tier in your design (e.g. web client, desktop client, business logic component, data component, and database server)
   b. Give a brief description of each component in your high-level design diagram and state their roles and responsibilities

Note: Since you will be developing the software based on your high-level design, it must be realistic.

Group Submission: Once completed, your team need to submit the group's final decision on the solution direction and solution design of the project. Also included are individual

member's comments (one – two paragraphs) on whether they agree with the final decision with reasons (i.e. why you agree or disagree with the group).

Pass Task 4.1 Quality
This task aims to develop the quality requirements of the software project to ensure the quality of the software to be developed.

1. [**Individual Task**] Define your own "Definition of Done" for the project

   Hint: Remember that "Definition of Done" is a list of "conditions" you have to check to ensure that the software satisfies these conditions. You may use those suggested in Ken's video (See Lecture 3's slides). You may also use ISO25010 (or ISO9216) as a guide to identify the quality attributes and the relevant quality metrics.

   For example, for Functionality Correctness, you may want to use "number of errors found in testing" or "defects per KLOC". Remember to define the "acceptable range". For example, "number of errors found in testing <= 5% of the total test cases" and "all errors have been fixed". For the GUI component, you may want to consider using "Usability" to specify how good your GUI is in terms of ease of use.

Individual Submission: Once completed, you need to submit your "Definition of Done" to Doubtfire as individual work. See "05_R_Def_Done_Template.docx"

Pass Task 4.2 Quality

1. [**Group Task**] After having your own definition of done, discuss your definition of done with your Pass team to finalize a common "Definition of Done" for the project. Remember to document your discussions and reasons.

   [**Students aiming at Pass grade or Credit**] Document the entire group's discussion on your definition of done (with reasoning on the threshold values, if any) and submit it to Doubtfire. For example, if your team decided that "all code have to be refactored", you need to explain the reason of having "all code" not "90% of code". Or, if your team decided that "defect density <= 5 defects / KLOC", your need to justify why programs with "<= 5 defects / KLOC" is of good quality!

   [**Students aiming at Distinction or above**] There is a set of Distinction Tasks (Distinction Tasks 8.4, 8.5 and 10.6) related to the "definition of done". In a nutshell, you will be required to ***select and justify*** the appropriate characteristics and sub-characteristics of the ISO 25010 software quality model that are important to this software project.

Note: Your list of "Definition of Done" needs to be realistic and achievable because your team will be doing certain tasks in Sprints #1 and #2 to ensure these "Definition of Done" are satisfied.

Group Submission: Once completed, your team need to submit the group's final decision on the quality requirements of the project. Also included are individual member's comments (one – two paragraphs) on whether they agree with the final decision with reasons (i.e. why you agree or disagree with the group).

Pass Task 4.3 Project Proposal

1. [**Group Task**] Complete the template "07_R_Project_Proposal_Template.docx" based on your Pass team's final version in Pass Tasks 2.2, 3.2 and 4.2

Group Submission: Once completed, your team need to submit the group's final Project Proposal of the project.