

## SWE30010 Development Project 2: Design, Planning and Management

16 – 23 All Pass Tasks for Sprint #2 [8.1 – 8.2; 9.1; 10.1 – 10.5]

This document describes all pass tasks related to Sprint #2 done by you alone as an individual and your team as a group. It gives you an overview of all pass tasks and how they are related to each other. For the group tasks, you need to register your team in Doubtfire under the “Sprint 2 Group Tasks” and submit it as a group. Please do not call yourself “Sprint #2 Group” as there will be potential conflicts in group names.

**How your Sprint works:** Start Sprint #2 on Monday in Week 8 (Day 1 of Sprint #2).  
Day 10 of your Sprint #2 will be Friday the following week.

### Suggested Time Frame: Weeks 8 – 10 [2-week sprint, 10 working days]

<b>Start:</b>	Week 8
<b>Feedback:</b>	Ask Tutor in Tutorials in Weeks 8 – 10
<b>Midpoint check:</b>	Show your progress to your Tutor in Week 9 Tutorial
<b>Sprint Review:</b>	Demo to the Product Owner (your Tutor) in Week 10 Tutorial
<b>Sprint Retrospective:</b>	After the sprint review
<b>Due [8.1 – 8.2]<sup>1</sup>:</b>	Week 9, Mon (Mon, Wed class) / Wed (Fri class), 9:00am
<b>Due [9.1]:</b>	Week 10, Mon (Mon, Wed class) / Wed (Fri class), 9:00am
<b>Due [10.1 – 10.5]:</b>	Week 11, Mon (Mon, Wed class) / Wed (Fri class), 9:00 am

### Overview

You have done your first sprint. Now, it is time for your second sprint. In this sprint, you use your previous data to help your sprint planning process, that is how it was proposed in the agile process and how the professionals do it. I also want you to experience these changes.

In this set of tasks, your team need to perform the actual 2-week sprint **AND** practice the management practices suggested in Scrum. Detailed in Tasks below.

<b>Purpose:</b>	<ul style="list-style-type: none"> <li>To practise the management practices in a sprint</li> <li>To document and justify your final design in Sprint #2</li> </ul>
<b>Tasks:</b>	<p><b>Sprint Planning Meeting – Group [Pass Task 8.1]</b></p> <ol style="list-style-type: none"> <li>Develop the criteria for prioritizing the Product Backlog items for development</li> <li>Identify the sprint backlog items to be developed in Sprint #2</li> <li>Break down the tasks required to develop the sprint backlog items selected in 1 above</li> </ol> <p><b>Setup for Sprint – Group [Pass Task 8.2]</b></p> <ol style="list-style-type: none"> <li>Update the task board with items in the appropriate places</li> <li>Setup a burn-down chart to track the sprint’s progress</li> <li>Setup the project repository site</li> </ol> <p><b>Perform the sprint – Group [Pass Tasks 9.1 and 10.1]</b></p> <ol style="list-style-type: none"> <li>Sign up tasks</li> <li>Perform the tasks</li> <li>Sync files to your repository</li> <li>Record time for completion</li> <li>Update the burn-down chart with an estimate of “remaining effort in hours”</li> <li>Add new product backlog items, if any</li> <li>Perform daily stand-up meetings</li> </ol> <p><b>End of Sprint meetings – Group [Pass Tasks 10.2 and 10.3]</b></p> <ol style="list-style-type: none"> <li>Book a time for sprint (product) review with your tutor</li> <li>Perform sprint review to the stakeholder (your tutor)</li> <li>Perform sprint retrospective</li> </ol>

<sup>1</sup> The submission due date for Wed tutorial class is Monday whereas that for Fri tutorial class is Wednesday.

	<b>Software Design for Sprint #2 – Group [Pass Task 10.4]</b> 17. Document your software design so far 18. Justify your design <b>Peer Review – Individual [Pass Task 10.5]</b> 19. Review each team member's performance in Sprint #2 including self
<b>Pre-req Task<sup>2</sup></b>	All Pass Tasks for Sprint #1
<b>Time:</b>	2 weeks for the entire sprint [8 hours per week per person for 10 working days]
<b>Resources:</b>	Lecture 01 Scrum <a href="https://en.wikipedia.org/wiki/Scrum_(software_development)">https://en.wikipedia.org/wiki/Scrum_(software_development)</a> Lecture 04 Sprint Backlog Lecture 04 WBS Lecture 04 Estimating Part 1 Lecture 04 Burndown chart Lecture 06 Estimating Part 2 Lecture 06 Risk Peer_Review_Form.docx
<b>Suggested Tools:</b>	[These tools are suggestions only. You can choose your own. It does not matter which one you choose, you still need to figure out how to set it up yourselves.]  <b>Repository:</b> GitHub – <a href="http://www.github.com">www.github.com</a> <b>Task Board:</b> Trello – <a href="http://www.trello.com">www.trello.com</a> <b>Burn-down chart:</b> Burndown for Trello – <a href="http://www.burndownfortrello.com">www.burndownfortrello.com</a> <b>Communication Tool:</b> Slack / Skype / Texting via SMS / WhatsApp [Remember to capture the screen images]
<b>Feedback:</b>	Ask your tutor for feedback
<b>Next:</b>	Pass Task 10.99

### Group Pass Tasks 8.1 – 8.2, 9.1, 10.1 – 10.4 Submission Details and Assessment Criteria

Each team needs to create a new group on Doubtfire, called it Your Sprint #2 Group. Each team needs to create a document (pdf) in **portrait** mode<sup>3</sup>. 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 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.

Submission requirements for each task are in the Tasks and Instructions section below.

### Individual Pass Task 10.5 Submission Details and Assessment Criteria

You must create your own document (pdf) in **portrait** mode<sup>4</sup>, which you will upload to Doubtfire, with the following details:

- Your name and student id
- Your tutor's name
- Details (name and ID numbers) of your team members, if any
- Your own responses to the tasks according to the corresponding instructions

<sup>2</sup>You need to complete the pre-req (pre-requisite) task before doing this task.

<sup>3</sup>Landscape mode pdf does not work properly in Doubtfire.

<sup>4</sup>Landscape mode pdf does not work properly in Doubtfire.

**Tasks and Instructions****Project Environment / Context**

Your proposal of PHP-SRePS has been accepted and agreed by People Health Pharmacy (your client). The entire development team is using the Scrum agile development process with a two-week sprint. Your sub-team consists of 3 – 4 team members. You can choose your own development languages (e.g. Visual Basic, C# or Java). You cannot use or customize any existing project (open or closed) because this is a “development” project not a “customization” project.

This is Sprint #2. Your team has just finished the first sprint. Your team is now required to perform another sprint to continue the development of the product, basically by identifying and developing items from your Product Backlog list (may be new or any unfinished items in your previous sprint – these unfinished items should now be put back in your Product Backlog).

**Note to students on total amount of hours in a Sprint #2:** Now that you have your team's actual velocity of your Sprint #1. You need to use this velocity in your current sprint planning meeting (Pass Task 8.1).

**[Duration: Next two weeks, approx. 8 hours per week per person]**

You already formed a team of 3 – 4 students for previous sprint. If you can stick together with the same team, that will be great. In case, you cannot, that is fine as well, but you need to form a new team of 3 – 4 students. With this current team, you need to perform the following tasks:

**Group Pass Task 8.1 Sprint Planning Meeting**

After the first sprint, your team may have an updated list of the Product Backlog. In case you have the same list (that is, no new or no obsolete items), that is fine. You are now required to select items from the updated Product Backlog list and put them into your second sprint backlog.

1. Revise your criteria for prioritizing the items from the updated Product Backlog list. This time, risk involved in developing a certain item is considered as part of your criteria. You have to perform a potential risk assessment of those items in the Product Backlog and then decide which item(s) will be in your sprint backlog, based on your agreed and updated criteria.

Things to be included in your criteria:

- a. Business Value
- b. Development Effort
- c. Feature (Backlog Item) Dependency
- d. Date Needed / Timeline
- e. Risk involved
- f. Others (as you see fits, but you must have reasonable justification to the tutor's satisfaction)

Document the discussion of the entire team with reasoning (why you think that these are reasonable criteria; which one you think has a higher weighing than the others OR all are of equal importance etc.) and submit it to Doubtfire.

2. Use your criteria in Task 1 above to select **the highest priority backlog item** from the Product backlog that could be developed in one sprint [At the moment, a wild guess will be fine. Task 3 below comes the justification.] **But this time, you need to use your velocity in Sprint #1 for your planning purposes.** Here is what you should do (as an example):

Let's say you are a team of 4 and you planned 64 hours of work in Sprint #1.

- (a) If your actual velocity is 64 hours +/- 10% (i.e. your gradient of your burn-down chart is 6.4 hours per day), you can still use 64 hours as your planning target.
- (b) If your actual velocity is 40 hours +/- 10%, you need to use 40 hours as your planning target. These 40 hours is your estimation about completing the tasks as you would in Sprint #1 planning meeting. So, you get a consistency.
- (c) What if your actual velocity is 54 hours? This belongs to  $50 + 10\%$  or  $60 - 10\%$ . Using either one is fine. But I would suggest you plan for 50 hours, meaning that you can spend more time to do good quality work, rather than 60, which you may end up rushing through things and do things badly. Remember, being conservative will get you some leeway, and kind of "promising delivery".

**Note:** In case, this item is too big for one sprint (if you feel that it is too big e.g. take 5 weeks to do – a wild guess will do for the moment), you need to break it down further to "smaller" ones so that you can select one that could be done in one sprint. On the other hand, if the feature is too small for one sprint (if you feel that it is too small e.g. it can be done in 1 week), you need to identify additional item(s) in the product backlog that could be done with the chosen one together in the same sprint.

**Potential Questions that you may ask**

- |            |   |
|------------|---|
| <b>Q.1</b> | Why wild guess? How do we know for sure that the feature is too big or too small?   |
| <b>A.</b>  | You never know until you perform the Task 3 below, especially in the first sprint or for the time being. In later sprint, there are other ways to do it but depends on your results in previous sprints.  |
| <b>Q.2</b> | Then why are we doing this?   |
| <b>A.</b>  | I want you to go through the process and reflect. You have to pick one first, then "go through" Task 3 below to determine whether the one that you pick is good enough for the purposes or not. Also the focus here is to identify the highest priority feature based on your criteria. |
| <b>Q.3</b> | Would it be simpler if we just pick one and lie about the time/effort?  |
| <b>A.</b>  | That is unprofessional!   |

Document the entire group's discussion with reasoning and submit it to Doubtfire.

- 3. Perform time / effort estimation using any of the following methods. You may mix and match these methods to suit your need.
  - a. **[This is the one you used in Sprint 1]** Develop a WBS to break down all tasks involved in developing the backlog items selected in Task 2 above, making sure that all tasks can be done in one sprint. Remember to show the hierarchical relationship among the tasks, also their logical sequences in the WBS.

**Note:** For simplicity, the time for your sprint planning meeting should be counted towards your total work hours. For a 2-week sprint, a scrum team spends 4 hours max to do the sprint planning meeting. Why 4 hours? It is because they have to break down the tasks to a level that they are comfortable to give an accurate effort estimate for each task. This takes time. The team also needs time to discuss – agree or disagree – the task breakdown as well as the effort estimates. For your scrum project in this subject, you should spend 1 hour max to do the planning meeting.

**Note:** Remember that at the end of a sprint, you must deliver something that is up to the quality standard as specified in your project proposal. Your task breakdown in your WBS must be able to show such intention.

**Note:** For each bottom task in the WBS, put in the number of (working) hours (i.e. your efforts) required to complete the task. Add them all up. In case, the total is more than 2-week's work (see Note to Students on total amount of hours in Project Context above), it is an indication that the selected feature(s) is/are too big for the sprint. You may then need to revise your work in Task 2 above. Or, it may be that your group over-estimates the time required. So, you may need to revise your timing. The most important point here is that every group member is a responsible individual and is trustworthy, so be honest to yourself and to the group.

- b. Estimating by analogy
- c. Estimating by size comparison
- d. Estimating by "experts" / "Delphi" techniques

**[Students aiming at Pass grade]** Document the entire group's discussion on your estimation (time efforts) with reasoning and submit it to Doubtfire. No need to justify the chosen techniques.

**[Students aiming at Distinction or above]** There is a set of individual Distinction Tasks (Distinction Tasks 8.3 and 10.6) related to this. Basically, you are required to (1) select what technique(s) to be used in estimating a particular sprint backlog item in Sprint #2, and justify why you think that the selected technique is appropriate in Distinction Task 8.3; and (2) review and reflect your estimation accuracy in Distinction Task 10.6.

#### Group Pass Task 8.2 Setup the plan for Sprint #2

- 4. Update your task board accordingly

**Note:** This task can be performed by one team member. The time spent on setting this up is not counted towards your sprint.

- 5. Set up an ideal burn-down chart for your sprint as a starting point for your team to indicate the "ideal" progress based on the tasks in the sprint and your estimated efforts (e.g. hours) required to complete the tasks

**Note:** This task can be performed by one team member. The time spent on this is not counted towards your sprint.

- 6. Set up a project repository (e.g. allow access for new members)

By the way, remember to sync your files to the repository after you finish your day's work in the sprint.

**Submission:** Document your initial task board (Day 0 task board), your ideal burn-down chart (Day 0 burn-down chart), your project repository site on GitHub and submit it to Doubtfire for Pass Task 8.2.

#### Group Pass Tasks 9.1 and 10.1 – Development during Sprint

**For this development project, you can choose your own programming language (e.g. VB, C# or Java). But you must not use / customize any existing project (open or closed) as this is not a customization project.**

**Suggested time frame of a 2-wk sprint for DP2 purposes**

Week	Your selected day	Tutorial day
8	Day 1	Feedback from Tutor
9	Day 6	Feedback from Tutor
10		Sprint review and Sprint retrospective

**Group Pass Task 9.1 – Sprint #2, Week 1**

As sustainable development suggests, each team member should spend one - two hours per working day for the tasks on the sprint (a total of 8 hours per week). These may involve the following:

7. Sign up tasks (one at a time) that you want to do (remember to put your name on the task sheet on your Task board)
8. Perform the tasks accordingly (remember to move the task to the “Doing” column)
9. Sync your files to the repository at the end of each day’s work
10. Record the time to finish a task once you finish a task (meaning that you think that it is finished, remember to move the task from “Doing” to “Testing” – at this stage) so as to update the burn-down chart

**Note:** It needs some other team member to check it off before moving the corresponding task to the “Completed” column. There should be a separate “task” in the “To do” column. In case, you do not find it – just add this “testing” task as a new task to the “To do” column first, then some other team member will commit to do this “testing” task.

**Note:** Adding new tasks to the Task Board during the sprint is allowed. By doing so, we can refine our sprint planning skills for next sprint.

11. Update the burn-down chart so as to track the sprint progress
12. Add new Product Backlog Items (not sprint backlog items), if any
13. Perform daily stand-up meeting

**Note:** Your team needs to agree on a time each day to perform a 5 minute daily stand-up meeting. For DP2 purposes, Skype meeting will be fine. Document the meeting minutes for your submissions.

**Tasks for Submission of Pass Task 9.1:**

- a. Select one team member to capture the team’s updated Task Board (an image will be fine) at COB of each working day as evidences of your team’s progress. **So, I expect 5 such images, one for each day.**
- b. Select one team member to capture the team’s updated burn-down chart (an image of will be fine) at COB of each working day as evidences of your team’s progress. **Again, I expect 5 burndown charts, one per day.**
- c. Select one team member to record the daily stand-up meeting. **Again, I expect 5 meeting minutes, one per day.**
- d. Select one team member to record the status of your repository (e.g. check-in vs check-out status, an image showing the activity will be fine). **Again, I expect 5 such status reports, one per day.**

**Note:** These tasks can be performed by just one team member or different team members. The time spent on capturing the required images or taking minutes of daily stand-up is not counted towards your sprint.

**Submission:** Document your task boards (Days 1 – 5), your burn-down charts (Days 1 – 5), your repository's status (Days 1 – 5) and minutes of your daily stand-up meetings (Days 1 – 5), and then submit it to Doubtfire for Pass Task 5.1 at the end of Day 5

### Group Pass Task 10.1 – Sprint #2, Week 2

Continue to develop the product in the 2<sup>nd</sup> week of the sprint. Continue to collect evidences of your team progressing through the sprint (e.g. task board, burn-down chart and daily stand-up)

**Submission:** Document your task boards (Days 6 – 10), your burn-down charts (Days 6 – 10), your repository's status (Days 6 – 10) and minutes of your daily stand-up meetings (Days 6 – 10), and then submit it to Doubtfire for Pass Task 6.1 at the end of Day 10

### Group Pass Task 10.2 Sprint (Product) Review [30 minutes]

14. Send an email to your tutor to book a time in your Week 10 Tutorial to perform the sprint review. The time will be approximately 5 - 10 minutes.
15. Perform the sprint review with the stakeholder (your tutor) in Week 10 Tutorial

Your team must at least review the following:

- a. the items that were completed

Need a demo of the completed items to the stakeholder

- b. the planned items that were not completed (Why?)

Questions to consider:

- Q.1 Did your team under-estimate the level of complexity of the item in sprint planning meeting? How can your team get a better estimate on the level of complexity of an item in next sprint?
- Q.2 Did your team under-estimate the time required to complete the task? How can your team get a better estimate on the time required to complete a task in next sprint?
- Q.3 Is the task description of the item too vague for the work? How can your team achieve a better task description next time?
- Q.4 Poor design of the program? How would your team improve on the design of the program in next sprint?

Other questions? (Please specify)

**Note:** Remember to book a time (e.g. 10 – 15 minutes) with your tutor for the demo early.

**Submission:** Document your evidence of performing the product review and any comments/suggestions from the stakeholder for improvement

### Group Pass Task 10.3 Sprint Retrospective (Process review) [30 minutes]

16. Perform sprint retrospective in Week 10

Your team must at least review the following:

- a. Your team's velocity – ideal (from your ideal burn-down chart) vs actual (from your final burn-down chart)

Questions to consider:

- Q.1 Did your team over-estimate your ability? Or Did you under-estimate the effort required to complete the tasks?

Q.2      What can you do in order to get a better understanding of the  
            “complexity” of the tasks required? Or What can you do in order to get  
            better time estimations next time?  
Other questions? (Please specify)

b.    Your team’s process

Question(s) to consider: What is working? What is not? Why or Why not?

c.    Any suggestions to improve your team’s process in next sprint. [Be realistic, you  
will enact on these suggestions in the next sprint.]

**Submission:**    Document your discussion and suggestions for improvement for next sprint

**Group Pass Task 10.4 Document your Software Design**

17.      Document the design of the software components for the sprint backlog items  
            completed in Sprint #2

Hint:      Remember to use design diagram to show the interactions between  
            different software components (e.g. class diagram, sequence diagram, ...)

18.      Justify your design is following good design principles (followings are some  
            suggestions, you may have others)  
a.    Having strong cohesion and weak coupling  
b.    Having good OO principles  
c.    Using appropriate design patterns (e.g MVC), algorithms, data structures, and  
            architectural styles

**Submission:**    Document all these and then submit it to Doubtfire.

**Individual Pass Task 10.5 Peer Review in Sprint #1**

19.      Complete the “23\_R\_Peer\_Review\_Form.docx” as per the instructions

**Submission:**    Submit your completed peer review form to Doubtfire individually