# Process Report

# Library Server and client system

## ICT Engineering

Course: SEP2

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Group:

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# Contents

# Group Policy

Before we started doing this project we had reached a consensus that we need a group policy to keep all our group members work under plan.

1. The group meeting will be on ordinary working hours from 9 – 15. If any inconvenience consensus will be held among the group members.

2. The group meeting will be on weekdays during the project period i.e. five times a week.

3. All the group members should be prepared for the group meeting and all work must be completed assigned on the previous day.

4. Breaks are of 15 minutes and the breaks can be taken after every 40 minutes of meeting.

5. We will prepare about the agenda before we meet with the supervisor. The agenda should or can be made by all the group members.

6. Supervisor meeting will be held whenever it is necessary and when decision can't be made by the group members.

7. All groups member is not allowed to be late.

8. Group members are provided with more tasks if they don't show up in the meetings.

9. Shishir will be keeping our log.

10. All group members will be provided with the information before taking any decisions and all group member are provided to put their perspective.

11. Everyone in the group are supposed to provide equal contribution.

If group members don't show at the meeting continuously then we can expel them from the group.

# Scrum Analysis

## Scrum plan and meeting log

Our goal of this project is to develop a library operating system to provide online access to the library for users and librarians. We have divided this work into 4 sprints to complete the work on time. The tablet below shows our Scrum plan.

| Sprint | Start date | End date | Meeting hours |
|--------|-----------|----------|---------------|
| Sprint 1 | 16.10.2017 | 20.10.2017 | 20 |
| Sprint 2 | 27.11.2017 | 01.12.2017 | 23 |
| Sprint 3 | 04.12.2017 | 08.12.2017 | 25 |
| Sprint 4 | 11.12.2017 | 15.12.2017 | 25 |

We also create a meeting log to determine if the work will be finishing the in process. The table below indicated the concrete meeting date and location during the project week.

| Meeting date | Start time | End time | Meeting hours | location |
|--------------|-----------|----------|---------------|----------|
| 16.10.2017 | 9:00 | 15:00 | 6 | Meeting hall |
| 17.10.2017 | 9:00 | 15:00 | 6 | Meeting hall |
| 18.10.2017 | 9:00 | 15:00 | 6 | Meeting hall |
| 19.10.2017 | 9:00 | 15:00 | 6 | Meeting hall |
| 28.11.2017 | 9:00 | 15:00 | 6 | Meeting hall |
| 29.11.2017 | 9:00 | 15:00 | 6 | Meeting hall |
| 30.11.2017 | 9:00 | 15:00 | 6 | Meeting hall |
| 01.12.2017 | 9:00 | 13:00 | 4 | Meeting hall |
| 04.12.2017 | 10:00 | 14:00 | 4 | Meeting hall |
| 05.12.2017 | 9:00 | 15:00 | 6 | Meeting hall |
| 06.12.2017 | 9:00 | 15:00 | 6 | Meeting hall |
| 08.12.2017 | 10:00 | 14:00 | 4 | Meeting hall |
| 11.12.2017 | 10:00 | 12:00 | 2 | Meeting hall |
| 12.12.2017 | 14:00 | 16:00 | 2 | Meeting hall |
| 13.12.2017 | 10:00 | 14:00 | 4 | Meeting hall |
| 14.12.2017 | 11:00 | 15:00 | 5 | Classroom |

# Scrum roles self-reflection

## Wangshu Xu - as a Product owner

There are three roles in a Scrum development team.my role is the Product Owner. The main responsibilities of the Scrum product owner are Driving a project from a business perspective, delivering a sharp vision of the product backlog, and defining its key features. The primary responsibility of the Product Owner is to ensure that the team develops only the most important Backlog entries to the organization and helps the team do its job of Sprint without disrupting team members and quickly providing all the information the team needs.

My key role also needed to define the publish date, the finished date and the developed priority to the project. For example, when we are making the requirement list of our project, I should take charge of dividing the requirement list into high priority requirements and low priority requirements.

During the whole period of the project, it is my responsibility to attend three Sprint Meeting (Scrum Planning Meeting，Sprint Review Meeting and Sprint Retrospective Meeting). After I complete the two main requests---build the Scrum product backlog and define the priority to the tasks. I also need to take responsibility to edit the product backlog when the requirement has changed.


## Shishir Sharma – as a Scrum Master and Scrum Team

As we only had two members in our group one of us had to carry out two roles. So, I was Scrum Master and Scrum Team although we switched our roles in each sprint. The main responsibilities of the Scrum Master were to conduct or organize meeting and see all the team member would do equal amount of work. I also mostly represented my group in the supervisor meeting and kept the log. As a Scrum Team I made the code part of the library and made some part of the GUI. The product owner decided to do make the code mainly in the third and fourth sprint and as a scrum team I followed the order of the product owner. After some of the construction we used to have a meeting and product owner would give us some advice to change some of the design.

I made the implementation for the administrator and the user part in the library. As being the small group, we had decided to divide the work between us. My other team member made the design of the GUI and my work was to make it functional. As a scrum master I decided to provide access to administrator to see the list of books and all the customer. I also decided to edit the design of the GUI. I also decided the scrum team to work on the implementation of administrator part on the third sprint and implementation of the user's part in the fourth sprint.

I had also decided to add a logging in the user and administrator part but due to lack of time we couldn't complete it. Although the work we have made is also good enough. As I was scrum master I asked everyone equal hours and contribute equally in the project.

# Product backlog

Product Backlog includes all the content to be delivered, the content of which is based on the value of the business needs of the order, the priority to each Backlog can be adjusted, the demand can be increased or decreased. Therefore, the product Backlog will continue to keep maintenance.

For determining the main requirements and the developer tasks we have made this Product Backlog. We have calculated the total hours of the whole project period, it consists 120 hours.

| SN | USER STORY | Points | Burned |
|----|------------|--------|--------|
| 1. | As a user, I can run the system in two or more computers. | 20 | 20 |
| 2. | As a user, I can see the data stored in the database. | 20 | 20 |
| 3. | As an Administrator, I can insert books. | 10 | 10 |
| 4. | As an Administrator, I can delete books. | 10 | 10 |
| 5. | As a user, I can borrow a book from library. | 10 | 10 |
| 6. | As an Administrator, I can remove customers. | 5 | 5 |
| 7. | As an administrator, I can add customers. | 10 | 10 |
| 8. | As an administrator, I can get customer detail. | 5 | 5 |
| 9. | As a user, I can see all the books as a list. | 5 | 5 |
| 10. | As an administrator, I can see all the customer | 10 | 10 |
| 11. | As a user, I can return a book to the library. | 10 | 10 |
| 12. | As a user, I can see all the customers as a list. | 5 | 5 |

## Sprint Planning log

We have divided our project period in to 4 sprints based on weeks. Each sprint contains one week to work on the user story which we decided on the group meeting at the beginning of this sprint.

## Sprint 1

We had a group meeting and a brainstorm before we start this project. We were more focusing on the project description of this sprint. We see this as the first sprint because we had decided the Product Backlog, main requirements and Use Case Diagram of our project during this sprint.

| S.N. | User Story | Estimate points |
|------|------------|-----------------|
| 1. | **Product Backlog/Requirement/Use Case Diagram** | 10 |

## Sprint 2

This sprint started 2 months after the first sprint, it was quite a challenge to us because one of the group member has left our team, however we managed to make it through.

On this sprint, we decided to complete these two user stories below and included with the implementation and testing.

| S.N. | User Story | Estimate points |
|------|------------|-----------------|
| 1. | **Connect Server and Client** | 20 |
| | Class Diagram | 4 |
| | Implementation | 10 |
| | Testing | 6 |

| S.N. | User Story | Estimate points |
|------|------------|-----------------|
| 2. | **Connect with database** | 20 |
| | Class Diagram | 4 |
| | Implementation | 10 |
| | Testing | 6 |

## Sprint 3

The 3<sup>rd</sup> sprint plan is quite easier for us because we have already completed twice meeting before and the main structure of our product backlog has established, it is easy for us to edit the item in the product backlog.

Therefore, we planned to complete the main function based on the requirement during this sprint. (insert a book, remove a book, insert a customer, delete a customer)

| S.N. | USER STORY | Estimate points |
|---|---|---|
| 1 | As an administrator, you can insert book in the library. | 10 |
| | Implementation | 4 |
| | Test | 2 |
| | GUI Design | 4 |

| S.N. | USER STORY | Estimate points |
|---|---|---|
| 2. | As an administrator, you can remove book in the library. | 10 |
| | Implementation | 4 |
| | Test | 2 |
| | GUI Design | 4 |

| S.N. | USER STORY | Estimate points |
|---|---|---|
| 3. | As an administrator, you can insert customer. | 10 |
| | Implementation | 4 |
| | Test | 2 |
| | GUI Design | 4 |

| S.N. | USER STORY | Estimate points |
|---|---|---|
| 4 | As an administrator, you can remove customer. | 10 |
| | Implementation | 4 |
| | Test | 2 |
| | GUI Design | 4 |

## Sprint 4

This is the last sprint in our project. We planned to finish the main function and GUI design for user.

| S.N. | USER STORY | Estimate points |
|------|------------|-----------------|
| 1. | As a user, I can borrow a book from library. | 10 |
| | Implementation | 5 |
| | GUI implementation | 3 |
| | Test | 2 |

| S.N. | USER STORY | Estimate points |
|------|------------|-----------------|
| 2. | As a user, I can return a book from library. | 10 |
| | Implementation | 5 |
| | GUI implementation | 3 |
| | Test | 2 |

| S.N. | USER STORY | Estimate points |
|------|------------|-----------------|
| 3. | As a user, I can see all the books as a list. | 5 |
| | Implementation | 2 |
| | GUI implementation | 3 |
| | Test | 1 |

| S.N. | USER STORY | Estimate points |
|------|------------|-----------------|
| 4. | As a user, I can see all the customers as a list. | 5 |
| | Implementation | 2 |
| | GUI implementation | 3 |
| | Test | 1 |

## Sprints Review log

The main flow of the Sprints Review log is the scrum team presents the results of the work to users during the meeting, and team members want feedback and create or change Backlog entries there. In this sprint, we allow all the team members to try the function of the product.

## Sprint 1

We have set up our group and finished the project description of this sprint. The whole work was completed under our plan, we were glad that every team mate obeys the group policy and show attendance to the group meeting. Therefore, we had a good start on our project.

## Sprint 2

Every part of the user story was finished on time of this sprint. We didn't make any changes in our product backlog.
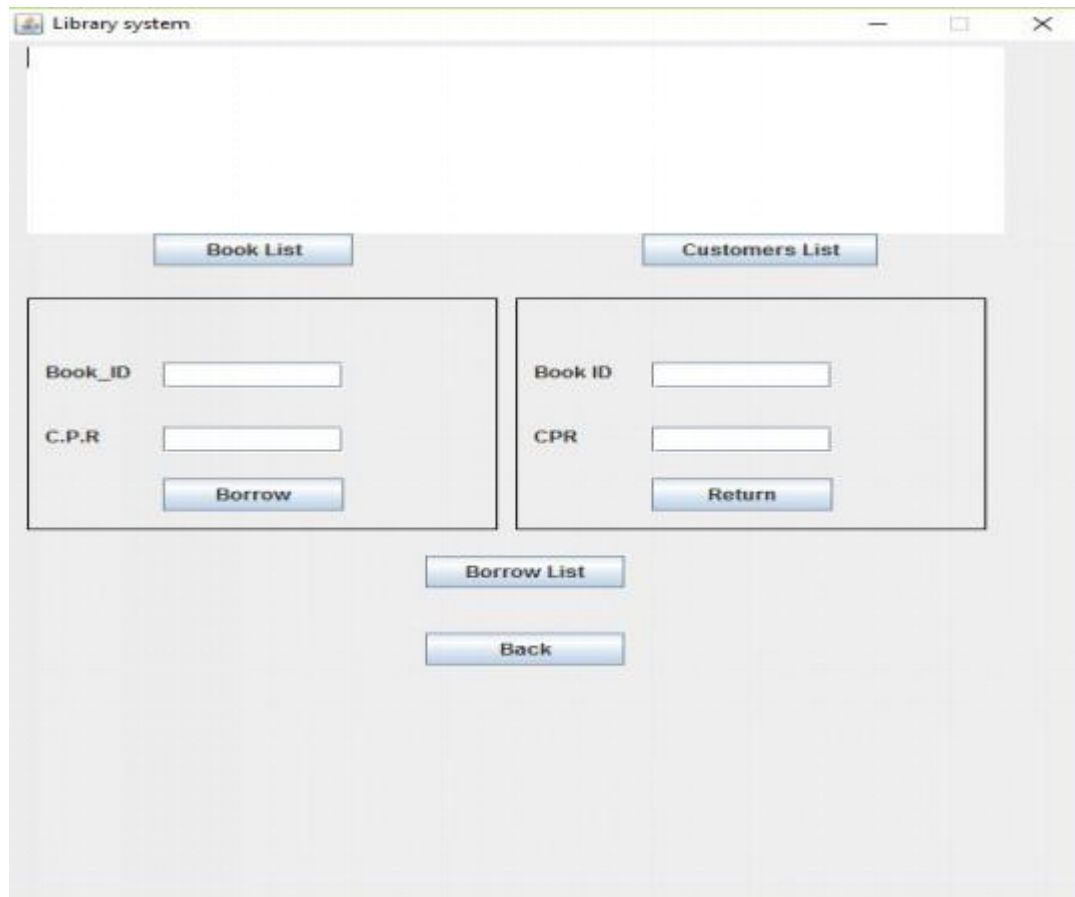
## Sprint 3

During the 3$^{rd}$ sprint we worked on the function of the administrator operating system. After we go through the product backlog in 3$^{rd}$ sprint, we added some parts of the user story in our product backlog.

| S.N. | USER STORY | Estimate points |
|------|------------|-----------------|
| 5. | As an administrator, you can see all the books. | 5 |
| | Implementation | 3 |
| | Test | 2 |
| S.N. | USER STORY | Estimate points |
| 8. | As an administrator, you can see all the customers. | 5 |
| | Implementation | 3 |
| | Test | 2 |

Those changes were made by the Scrum Master and product owner. The purpose of those changes is to make the user clearly find their object.

# Sprint 4

In the last sprint, we were focusing on the GUI design and function of User. We had made some changes in the GUI design according to the rules of the user friendly. We made a border to collect all the function of the borrow and return to make user easily operating on our system.

### Sprints Retrospective log

It is more like a reflection on our sprint meeting, the purpose is not to find a cure, but to find out what areas need to be improved.

### Sprint 1

It is the first time we work together on the semester project. We were not knowing exactly each other. Therefore, we start a group meeting and make a group policy. Every team member agreed to the group policy and sign their name on it. These actions made us know better each other and made our team more unite.

### Sprint 2

Unfortunately, one of the group member has left. Therefore, we lost our Scrum Master. After a small group talking, we decided to work by ourselves. However, the $2^{nd}$ sprint went better even though we had a tiny group of 2 people. We believed that it was because a tiny may not had so much arguments about the work distribution or something else, so that we can work on project more efficiency.

### Sprint 3

Everything was fine during this sprint, we discussed on our implementation of the code. After that, we decided to expand two user stories into product backlog.

### Sprint 4

During this sprint, we finished the GUI design and function of user. The Scrum team came up with a new idea about the design of the GUI, we were reach a consensus on that point, therefore we changed the design of our interface.

## Burndown Chart

The burn down chart is a visual representation of what needs to be done before the project is completed. Burnout has a Y axis (work) and X axis (time). Ideally, the chart is a downward curve, "burn out" to zero as the remaining work is done. Each of the sprints consists one week. As it shows on the graph, our project will be burn down by 4th sprint.

## Daily Sprint meeting log

**28/11/2017(9:00-15:00)**—

Today, we worked on the requirements and divided the work of use case and activity diagram. After that, we also made some code for the client server and the database. We will have had a supervisor meeting at 10:30. At last, we made some changes in the product backlog.

**29/11/2017(9:00-15:00)**—

Today, we discussed about the GUI. Then, we changed the product backlog. After that, we decided what we were doing for the second sprint. At last, we discussed about the use case description and activity diagram.

We also distribute the home work:

1.To complete the GUI part.

2.To finish with the code of administrator.

**30/11/2017(9:00-15:00)**—

Today, we edited some design of GUI. Then, we made the class diagram. After that, we decided what we were doing for the second sprint. Finally, we discussed about the codes.

We also distribute the home work:

1.To complete the GUI part.

2.To finish with the code.

**1/12/2017(9:00-13:00)**—

Today, we added some fields in GUI and then, we decided what we were doing for the third sprint. At last, we discussed about the diagram.

We also distribute the home work:

1.To complete the GUI part.

2.To finish with the code.

3.To make the GUI functional.

**4/12/2017(9:00-13:00)**—

Today, we edited the design of GUI for the books and user. we also made some part of the GUI functional. Finally, we discussed about the design pattern.

We also distribute the home work:

1.To make the GUI functional.

2.To make EER diagram.

3.To start with java doc.

4.To make a project work.

We have put the concrete daily meet log in the appendix(Appendix 7: Log).

## UP Phases

The Unified Process is the process of software engineering and development. It provides a disciplined approach to assigning tasks and responsibilities within the development organization. Its goal is to ensure high-quality products that meet the needs of the users on the predictable schedule and budget.

The Unified Process Model is a "process-driven, architecture-centric, iterative, and incremental" software process framework supported by UML methods and tools.

The UP phases divide a project into four distinct phases:

1. Inception--according to our plan of UP phases, the 1$^{st}$ sprint will take most part in this phase. We determine the main purpose of our project and the requirement of the user during this phase.

2. Elaboration--the 2$^{nd}$ sprint has fulfilled the main request on this phase, we have made our class diagrams during this phase.

3. Construction--the 3$^{rd}$ sprint and half of the 4$^{th}$ sprint has completed the requirement in this phase. We have completed the implementation of code and function of the GUI during these sprints.

4. Transition--we all believe that the rest of the 4$^{th}$ sprint finished the main tasks of this phase. We have done a Junit test during this sprint.

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# Self-Reflection

**Wangshu Xu**

*Before starting*

This is our second-time project and we have a tiny group with two people now. We have been informed that there will be a semester project for our group. At the end of October. We decided to develop a system to provide online access to all library resources for users and librarians. We have got a few experiences on making project because we have done the semester project one time. However, we should use some new technologies and theories during this second semester project.it is my first to using Scrum manage the whole process about the development of our project. I have to say it is quite a challenge for me to follow the Scrum analysis, but i need to make it through.

*After*

Fortunately, this time the project works well. However, I think it because we have learnt from last time we were doing project. Scrum is a useful tool to manage the process of the project. We can easily control the time and the work by using it.

Our group also have a good discussion to each other, after the group meeting we divided our specific work and show the result of the work to each other on next group meeting. In total, I think we have a good cooperation and a clearly way to divide the work. Furthermore, we could do better in time controlling ways. Some of these works can't finish on time and some of these works finished before the deadline we set this time. We could manage the time more exactly next time we do the semester project.

**Shishir Sharma**

From the previous experience of project and getting some ideas from the second semester I felt it was a bit hard to construct a client server project and inserting all data in the database. I wouldn't be able to complete this project if we didn't have a course assignment just a month before we started working on the semester project. The course assignment provided me with lots of knowledge and confidence to work on semester project. Although, we were not a big member group, we both tried to give our best in the project and made a good library server client system.

The project was very much systematic and accurate while constructing using the scrum. We had lot of things to do in this project, then in the first semester project. In the next project I would like to divide equal amount of work among the team members. And would encourage all the team members to provide equal level of work in the project. The team work in the project was good and we were very open with the problems. During the project we helped each other and got to learn various new programming style. By working in the team, I realized that if we could divide work among each other then it would be easier and faster. Scrum helped us a lot to keep us on track in the development of our project. It helped us to work faster and accomplish the goal faster then, the waterfall approach that we had done in first semester.

# Supervisor Meeting log

## 1st supervisor meeting

Questions:

1. About how can we do the class diagram.

2. About Scrum—there three roles in a scrum process. However, we just have two members in our group. Therefore, it would be a problem.

3. About inserting in database.

4. About the whether we need to add use case diagram.

Solutions:

1. product backlog should be more convenient to the client.

2. Differentiations between server and client in our system.

3. We can add more in our product backlog.

4.we can switch our roles when we are conducting different sprints.


## 2nd supervisor meeting

Questions:

1. How many design patterns to use?

2. Where should we code the database part in eclipse or Pgadmin?

3. Do we need JAVADOC for the Remote Library interface?

4. The class diagram.

Solutions:

1.we should user at least 2 design patterns.

2.It is not recommended to make a JAVADOC to these classes.


## 3rd supervisor meeting

Question:

1.About errors in the code part.

Solutions:

2.we corrected errors in the code part.

## 4<sup>th</sup> supervisor meeting

Question:

1. To ask about the burndown chart.

2. To ask about the JUNIT test.

3. we were not sure if our sequence diagram is correct.

4. What do we do in results and discussion in the project report?

5. About the product backlog. We were not sure if we need to add a sentence(as a supervisor, we need to finish the project report on time).

 6. To ask about the class diagram.

Solutions:

1.our burndown chart is fine.

2. we got some idea about the Junit test from supervisor.

3.we Made some correction in sequence diagram with the help of supervisor.

4. We need to write about the things that we had said we would do in the project but couldn't do or finish in the project results and discussion.

5.it is fine to add that sentence in sprint product backlog.

6.our class diagram is fine.

# Appendix