Library client server

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Table of content

Appendices (including Group Contract)

1 Background description

Library simply means that “a collection of information and similar resources made accessible to a defined community for reference or borrowing” [1]. Library can be found in various places like in education institutions, society etc. It’s solely purpose is to provide information for the user in several ways. As a result, in present days of technology it is rapidly moving towards providing facilities to the user through the internet.

There are various kinds of library depending upon the user. School library where we can find comic books, novels, scientific books etc. and it mainly focuses on teenage users. Academic library which is found in collages and university where different kind of course books and various study material are found. These kinds of library are focused mainly for student and staff. Public library which can be found in various places like in community, church etc. and can be used by common people and different recipes of books are found in these kinds of library.

The library has been upgrading itself and has adapted to technical world through E-books, DVDs, pdf etc. Previously we had to go to the library to get the books and had to come back if the book was not there or stay for hours to get it borrowed. It is very much time consuming.

2 Definition of purpose

The purpose is to develop a library system to provide online access to all library resources for users.

3 Problem Statement

Together we have created some questions that would lead us to our future system.

- How do we handle information about user, login id and password?
- How will we handle the information about borrowed books?
- How will we provide online access to list of all available books?
- How the system will be recording the borrowing time?
- How will we make search option?
- How should we make any messages to users if book borrowing time is at it end?

We believe that answering those questions would help us develop our system.

4 Delimitation

Our project will study and survey on the library system, we will develop a library server system in our system, the user can log in/out with the username and password, download, search and borrow a book.

We believe that we can have the pdf books and simulate the real books and material part.

In the case of library-related system, the last two problems shown in the problem statement are the ones that the project may not cover. We want the system to be able to save the specific borrow time and pop up a message before the deadline of book borrowing time. however, we found these two problems are more like the low priority requirements based on our assumption. It is not mandatory for our library system. Therefore, our project may not cover these two problems.

5 Choice of models and methods

To fulfil the requirements and develop our system, we have decided to use following models and methods:

1. Scrum - To help us manage the development of the system and make a structure of our project.
2. Use case - It shows the main actions that the actor can do in our system.
3. Activity Diagram - It shows the specific process that the actions in the use case.
4. Class Diagram -The class diagram represents the connections between classes of the program.
5. Sequence diagram – The interaction between the classes.

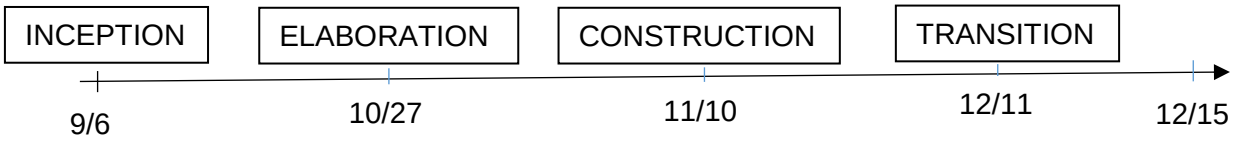
We also use the planning tool model to reflect on our models and methods in our project. It is attached below. For example, to solve the problem that the system should list of all available books. We have put the problem in the planning tool model so that we can easily acquire the reflection of the workload.

What	Why	Which	Which	Who	What
The problem	The reason	Level of outcome is expected	Method and model will be used to solve the problem	Who take charge of the point	Estimate of work load
Ability to log in with id and password	It can enhance the safety of the system .it is convenient for managing the organization.	High priority requirement.it is mandatory in our system	Use case; Activity diagram; Class diagram.	Scrum team	Based on our plan it will take two-day work out.
Having personal account with count of borrowed books	it is convenient for managing the system and books statement.	High priority requirement.it is mandatory in our system	Use case; Activity diagram; Class diagram.	Scrum team	Based on our plan it will take one-day work out.
Downloading the books	Guests should be able to download the pdf books because it can make the library system more efficient.	High priority requirement.it is mandatory in our system	Use case; Activity diagram; Class diagram.	Scrum team	Based on our plan it will take two-day work out.
Search option	It can make the guests easily find the books they want	High priority requirement.it is mandatory in our system	Use case; Activity diagram; Class diagram.	Scrum master	Based on our plan it will take two-day work out.

the system should list of all available books	After listing of all available books, the user can easily search the book.	High priority requirement.it is mandatory in our system	Use case; Activity diagram; Class diagram.	Scrum team	Based on our plan it will take two-day work out.
The system would record book borrowing time	After recording the borrow information the system can easily divide the books into different type.	Low priority requirement.	Use case; Activity diagram; Class diagram.	Scrum team	Based on our plan we will consider this part as an extra work.
The system will message user if the borrowing time reaches its limit.	It can remind somebody who forgot to return the book	Low priority requirement.it will be nice if the system have this function	Use case; Activity diagram; Class diagram.	Scrum team	Based on our plan we will consider this part as an extra work.

6 Time schedule

We will work on the project on every working days from 9:00 until 15:30. We will work at home on weekends. We planned to work total of 100 hours per person. And we will have four sprints in total.



7 Risk assessment

Risks that we may encounter are mostly connected to language barriers and too big workload for a group of 3 people which leads to consumption of more time, or the system may not look as excepted.

Risks	Description	Liklelihood 1-5	Severity 1-5	Risk mitigation	identifiers	responsible
Risk1	Language barrier	4/5	3/5	More easy talks, creating an relaxing atmosphere.	Misuntersteandings, repeating same questions, being closed.	Group
Risk2	Too big workload	3/5	4/5	Everyday meetings, helping each other to achieve synergy.	Shortages of work, being late with scheduled tasks.	Group

8 Sources of Information

1. Library - Definition and More from the Free Merriam-Webster Dictionary". merriam-webster.com [1].
2. VIA College, 2017.IT-SDJ2X-A17 Session Material. [online] Available at: https://studienet.via.dk/Class/IT-SDJ2X-A17/Session%20Material/Forms/Default.aspx [Accessed 27 September 2017].
3. Ken Schwaber and Jeff Sutherland, October 2011, The Scrum Guide, The Definitive Guide to Scrum: The Rules of the Game, Scrum.org

Appendices

1. Group Contract