Your Books EveryWhere

Analysis and Design Document

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1. Requirements Analysis

# Assignment Specification

In this application any users will provide books and they would be inform about disponibility of all books.They will search these items after some specifications,characteristics of them.After these they would check them for availability,if the book is available.If not,the users will be put in a priority queue(The first served will get the book).

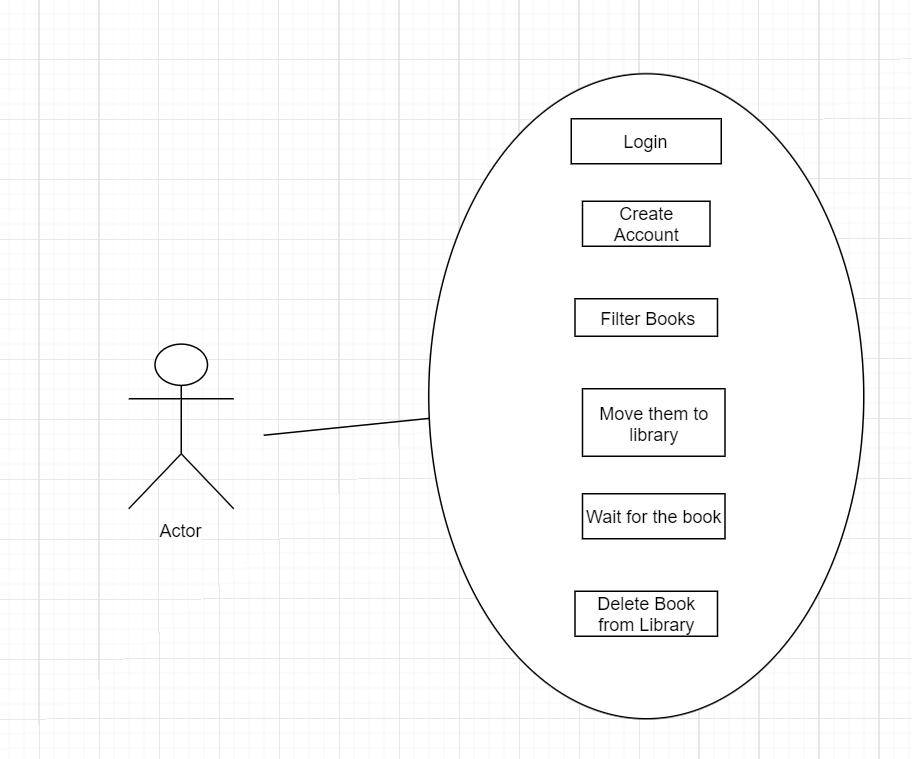
# Functional Requirements

This application will be made in C# with a friendly User Interface.They will login if they have an account.If not firstly they should register.After that thay will provide the book as I told in the previous section*.*

# Non-functional Requirements

One of the Non-Functional reuirements is the programming language that must to be an OOP one.For example:C++,Java,C#,Python.Another requirement is the implementation of one the the desing patterns and that is Factory Method.The program must done using Layered Architecture.

2. Use-Case Model



*description format:*

*Use case: <use case goal>*

*Level: <one of: summary level, user-goal level, sub-function>*

*Primary actor: <a role name for the actor who initiates the use case>*

*Main success scenario: <the steps of the main success scenario from trigger to goal delivery>*

*Extensions: <alternate scenarios of success or failure>*

*]*

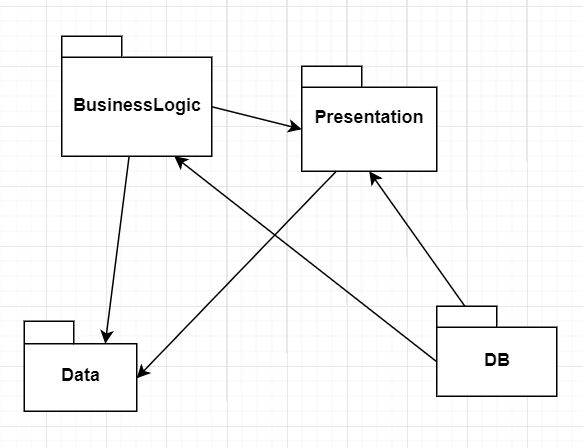
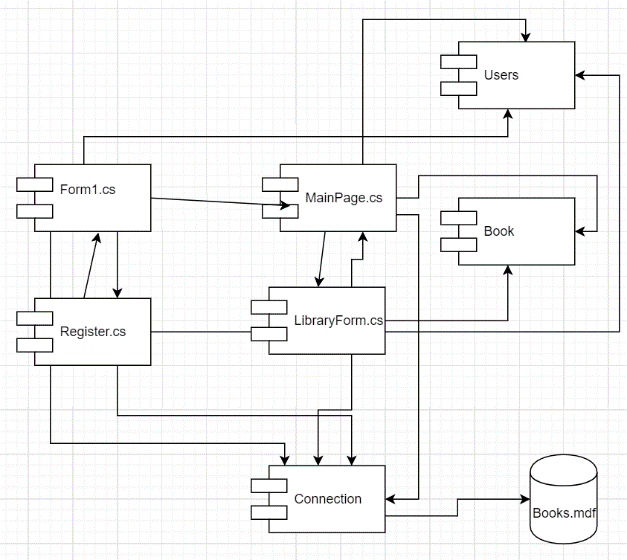
3. System Architectural Design

**3.1 Architectural Pattern Description**

As an architectural pattern ,for this project was used Layered Architecture.Components within the layered architecture pattern are organized into horizontal layers,each layer performing role within the application.These layers are:Business Logic,Data,Presentation and DB.

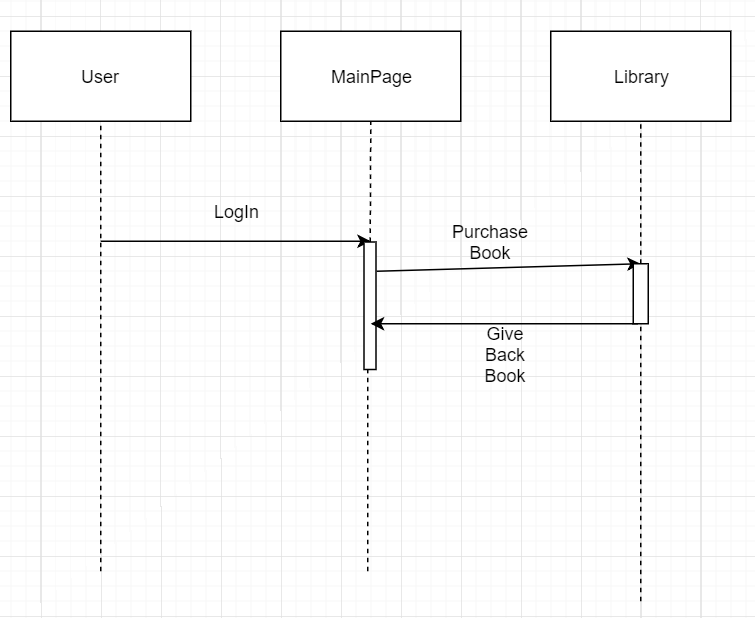
**3.2 Diagrams**

The Data has the role to manipulate the 2 main objects:user and book,The BusinessLogic has the role to make communication between database and forms and Presenation has all forms.

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*[Create the system’s conceptual architecture; use architectural patterns and describe how they are applied. Create package, component and deployment diagrams]*

4. UML Sequence Diagrams

*[Create a sequence diagram for a relevant scenario.]*

5. Class Design

**5.1 Design Patterns Description**

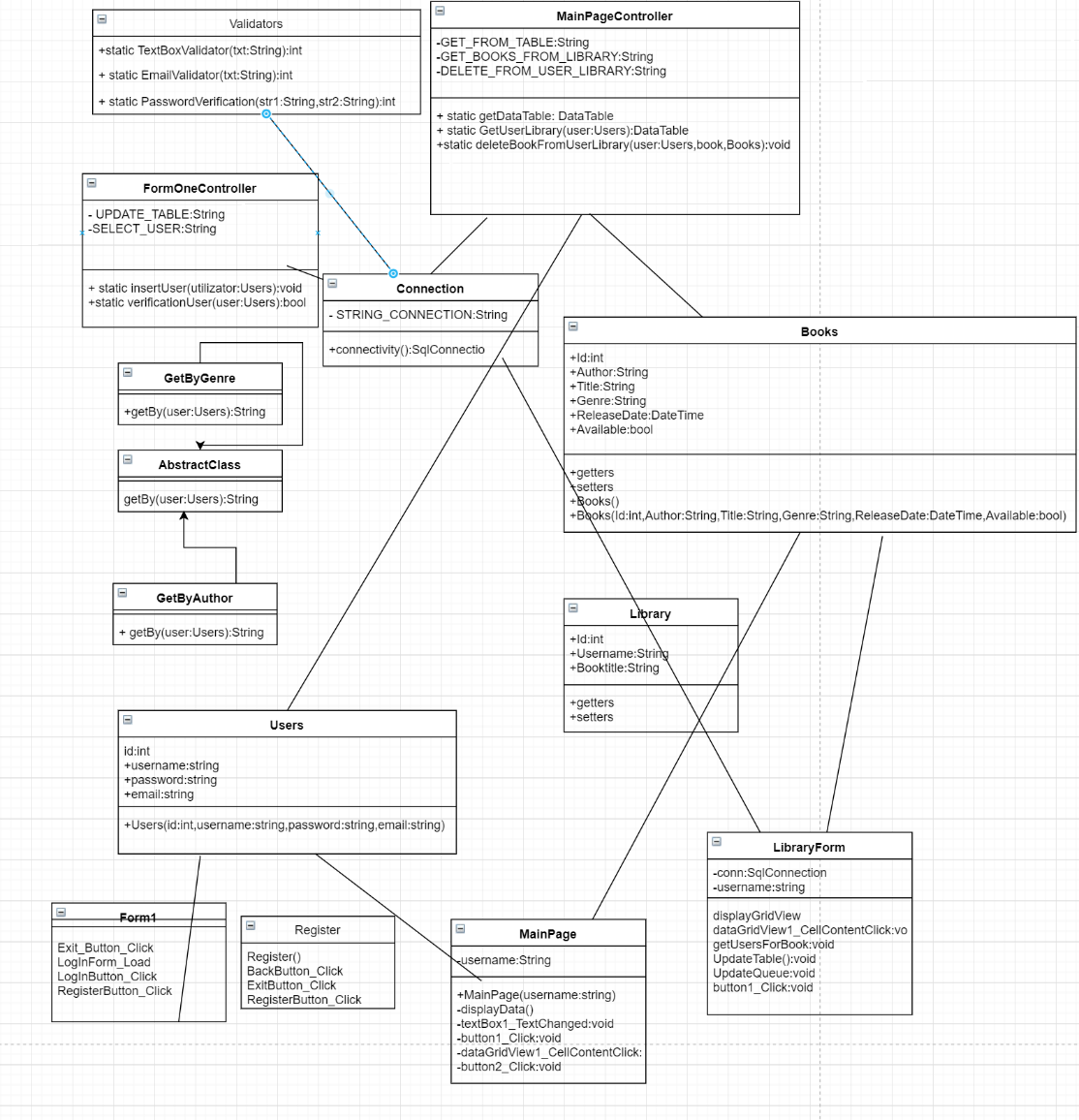
The main Design Pattern was Factory Method. Factory Method is to creating objects as Template Method is to implementing an algorithm. A superclass specifies all standard and generic behavior (using pure virtual "placeholders" for creation steps), and then delegates the creation details to subclasses that are supplied by the client.

Factory Method makes a design more customizable and only a little more complicated. Other design patterns require new classes, whereas Factory Method only requires a new operation.

In this project there was used an abstract class which was inheritanced by another two classes.These classes finished the method inside the first class.

**5.2 UML Class Diagram**

*[Create the UML Class Diagram and highlight and motivate how the design patterns are used.]*



6. Data Model

Data model used in this application was the Hierarchy model. The hierarchical model is similar to the network model except that links in the hierarchical model form a tree structure,while the network model allows arbitrary graph.

7. System Testing

*[Present the used testing strategies (unit testing, integration testing, validation testing) and testing methods (data-flow, partitioning, boundary analysis, etc.).]*

8. Bibliography

[1] <https://stackoverflow.com/questions/5843537/filtering-datagridview-without-changing-datasource>

[2] <https://stackoverflow.com/questions/11260843/getting-data-from-selected-datagridview-row-and-which-event>

[3] <https://stackoverflow.com/questions/665129/use-of-sqlparameter-in-sql-like-clause-not-working>