

Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

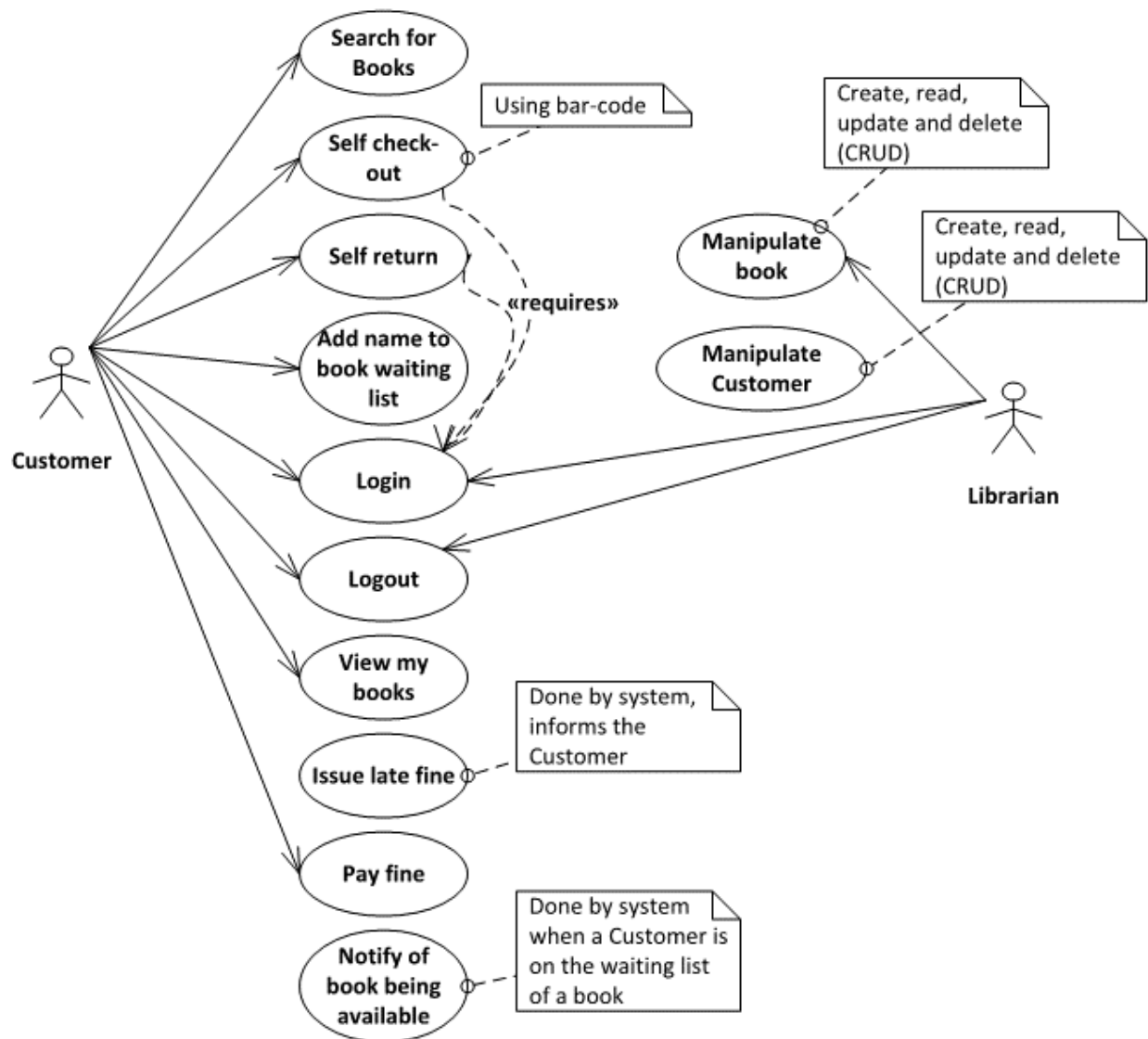
Library Book Loan System

System-Wide Requirements Specification

1. Introduction

This project describes the requirements and characteristics of the library book loan system. It provides information on the use of the interface, the systems it contains and the requirements. We created the system structure and design as desired by the stakeholders.

2. System-Wide Functional Requirements



Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

Actor	Use Case
Customer	1. Search for books
	2. Self-checkout
	3. Self-return
	4. Add name to book waiting list
	5. View my books
	6. Pay fine
Common Use Cases	7. Login
	8. Logout
Librarian	9. Manipulate book
	10. Manipulate user
System Agent	11. Issue late fine
	12. Notify of book being available

3. System Qualities

What is Quality in Software?

For This question many people can have different answers. Each software project starts at the request of the customers and changes according to their wishes. But the software development and production role does not belong solely to the customer, because there are many people working on the product development stage such as software engineer, analyzer or developer. In this case, the quality of the concept is changing in our production position of software. Because each different area in the project has its own characteristics to take into account. But almost every field provides the common purpose customer's requests and at the same time the product can be updated and used after delivery. Even this point of view can be considered as a quality indicator in a project.

In addition, from an overall point of view, the software must be able to provide a few features to provide quality. These features are reliability, usability, performans, supportability, reusability, integrity, flexibility.

3.1 Reliability

Software reliability is defined as the likelihood that the system or its components will be able to perform the functions expected of them in a particular environment within a certain time period. So it will be necessary to establish error reporting structures with several functions written for the non-functional reliability requirement. Only in this way the reliability of the software can be provided.

3.2 Usability

Usability is intended to create the ease of use of the system. The ease of use in this case can often be thought of as an easy interaction between the product and the customer. Providing this feature, one of the important features of ensuring quality from the point of view of many customers is also provided.

Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

3.3 Performance

In general, performance is the customer's first request because the performance tries to keep the speed of the system in the most efficient way. Thus, time is earned, which is the demand of many people. But in doing so, another feature of the system should not be restricted, it must be done in integrity with other quality standards.

3.4 Supportability

Supportability ensures that the developed software not only works in certain environments, but it means the software works in different environments with different software. Since the software we produce will be java language, our product will continue to work by maintaining the level by adapting to many different environments thanks to java virtual machine.

3.5 Reusability

Reuse is a matter that needs to be carefully considered. Reuse includes not only the reuse of the code, but also the use of design, testing environment, documents, and so on. The software can be transformed from one form to another, if it is produced with a certain discipline in advance, using the feature of being a flexible product. In other words, a software that has been previously produced with a certain requirement with the reusability feature can be rearranged according to a different requirement.

3.6. Integrity

Integrity is aimed at ensuring the working order and accuracy between the operations performed by the software. The result is that the resulting product operates correctly as a single structure.

Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

4. System Interfaces

4.1 User Interfaces

The user interface has been improved due to the requirements of the project. The interface we use is simple and in a quality to meet requirements.

4.1.1 Look & Feel

Our interface is very simple and useful. We have created an interface that everyone can easily use.

4.1.2 Layout and Navigation Requirements

Layout and navigation is quite simple. Like most programs, the interface has a search slot and a button under the center.

4.1.3 Consistency

Our interface is simple and easy to understand. The button consists of the menu and the search icon. We have defined an interface that shows search results in lists. We organized the navigation through the books with the arrows back and forth. The books are arranged in alphabetical order.

4.1.4 User Personalization & Customization Requirements

Users can access book search, book viewing, book retrieval and payment systems. The librarian will update the books and manipulate the members.

4.2 Interfaces to External Systems or Devices

In this system, we created a database to store and manage book records. We used the Eclipse IDE for interface creation. We created a payment system as another external link.

4.2.1 Software Interfaces

- We used the window builder in Eclipse to create the interface and application.
- We will use MySQL for our database.
- We will develop an external payment system for book purchases. This system will be linked to the database.

4.2.2 Hardware Interfaces

There are no hardware interfaces in this system.

4.2.3 Communications Interfaces

There are no communications interfaces in this system.

Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

5. Business Rules

5.1 Book borrow rules

5.1.1 A customer can borrow up to 10 books in total at most.

5.1.2 A book can be borrowed for 1 month at most.

5.1.3 A customer can't borrow a book if there are active loan fines

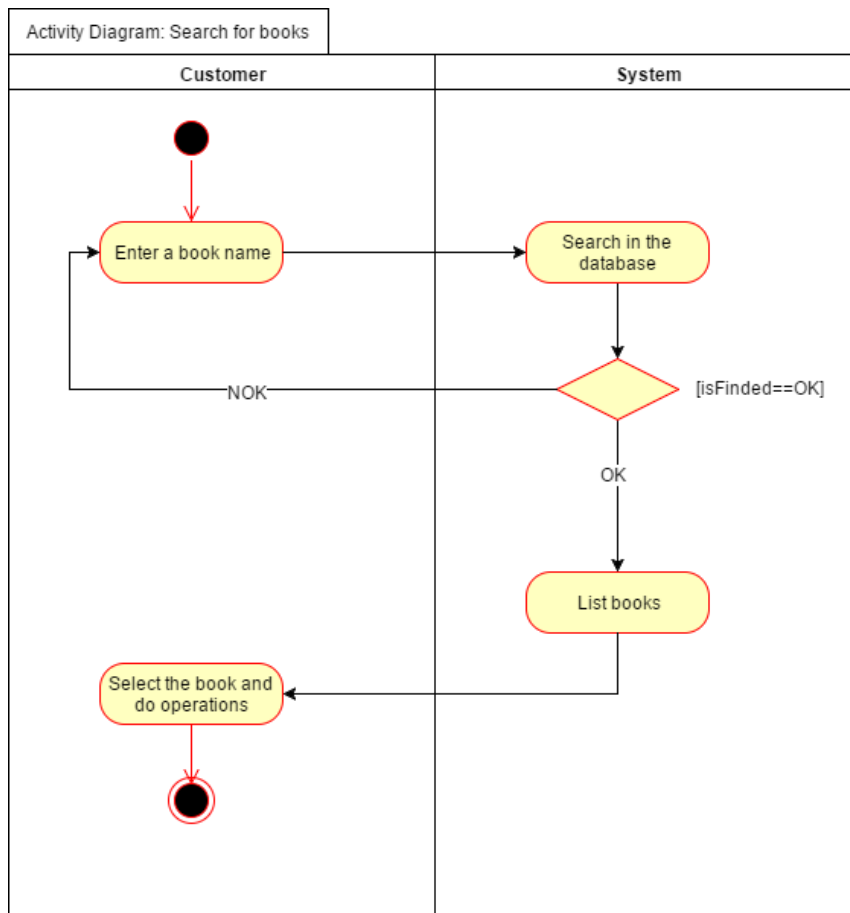
5.2 Book loan fine

5.2.1 If a customer will not self-return a book in 1 month, there will be a daily fine TL 0.5 per day

Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

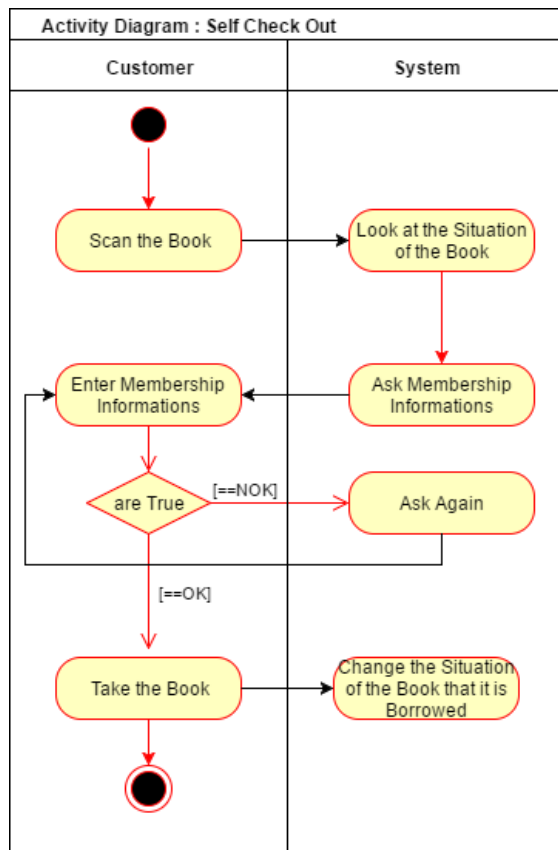
6. Appendix A

Use Case 1 : Search for books	
Actors	Customer
Precondition	Customer must be online on a system
Post-condition	Found a book searching for.
Main(happy) path:	<ol style="list-style-type: none"> 1. Type a book name to a search box. 2. System searches for a book on database and lists them. 3. Customer selects the book and does operations about the book.
Alternative path:	<ol style="list-style-type: none"> 1. There is no book found which related to customer's search. 2. Customer types another book name for search.



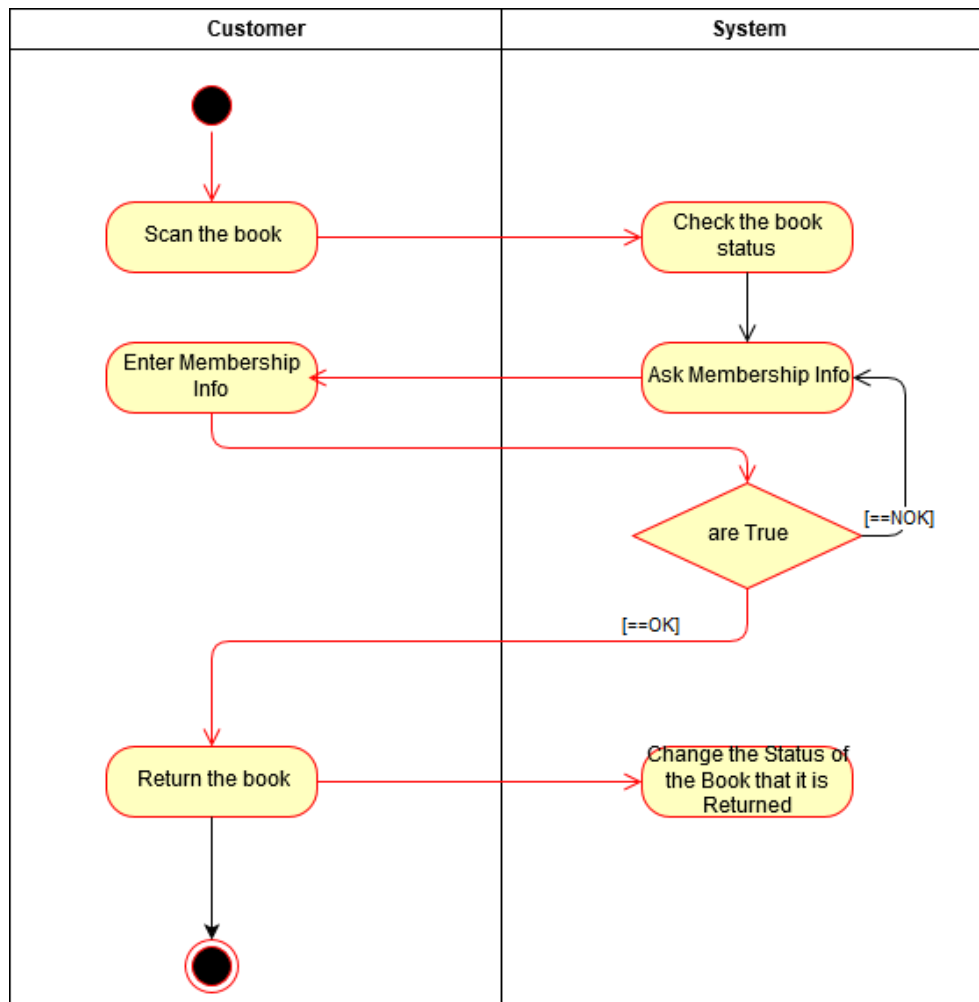
Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

Use Case 2 : Self Check Out	
Actors	Customer
Precondition	Customer has the book but did not scan the Book yet.
Post-condition	Customer borrowed the Book
Main(happy) path:	<ol style="list-style-type: none"> Customer scans the Book by Machine. System which is connected with Machine searches for that book to review it. Systems asks the Membership information(username and password) to save the book situation with his/her account. Customer enters the Account name and password. Customers borrows the book
Alternative path:	<ol style="list-style-type: none"> If informations to log in are not correct then customer will enter again. .



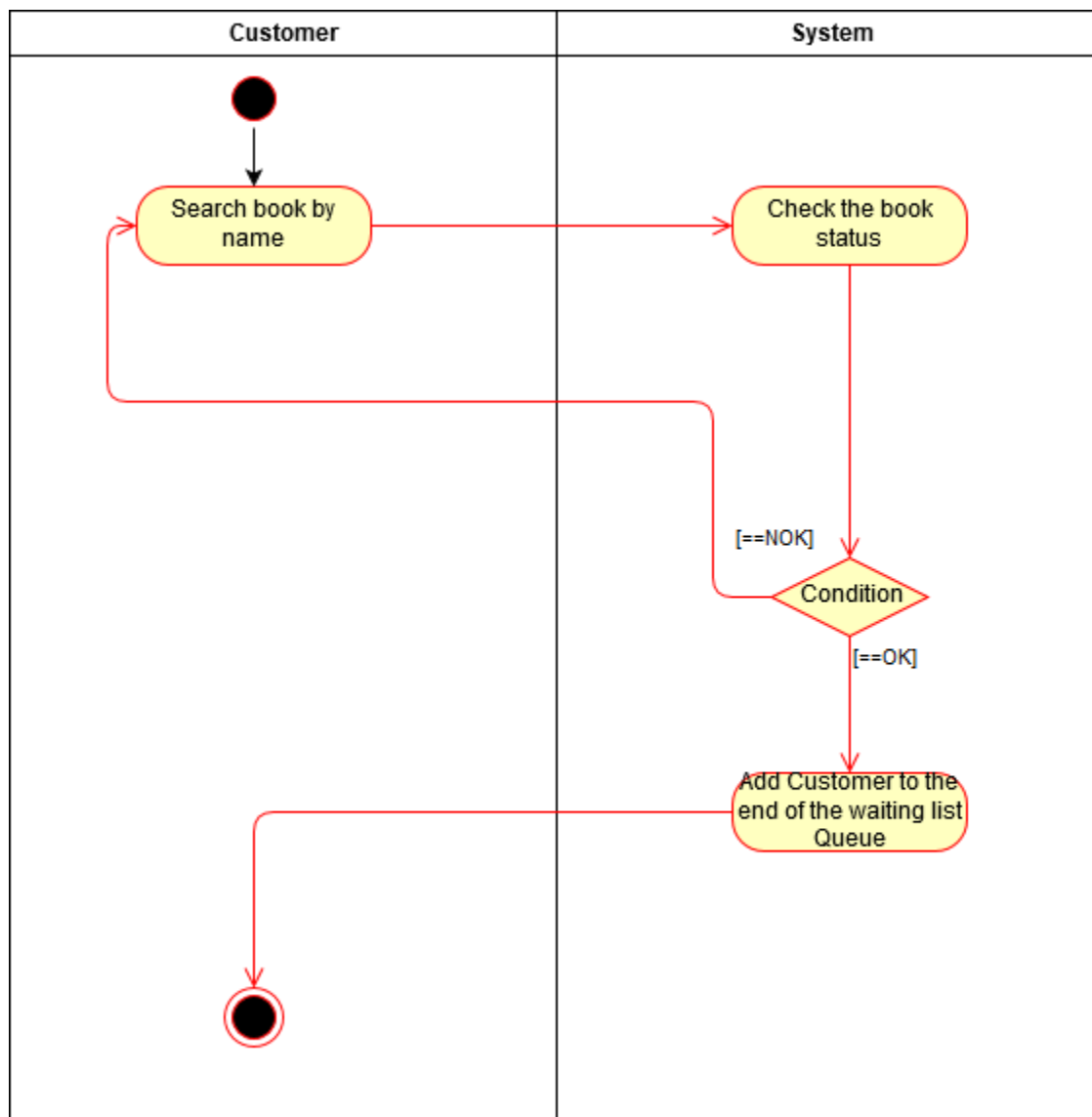
Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

Use Case 3 : Self return	
Actors	Customer
Precondition	1. Customer must not be logged in.
Post-condition	1. The book has been returned
Main(happy) path:	1. The customer scan a book name or names 2. System check if a book can be returned 3. System ask for logging in 4. Return the book 5. Update record in the Database
Alternative path:	1. User not logged in, loop until login or termination 2. The book not returned



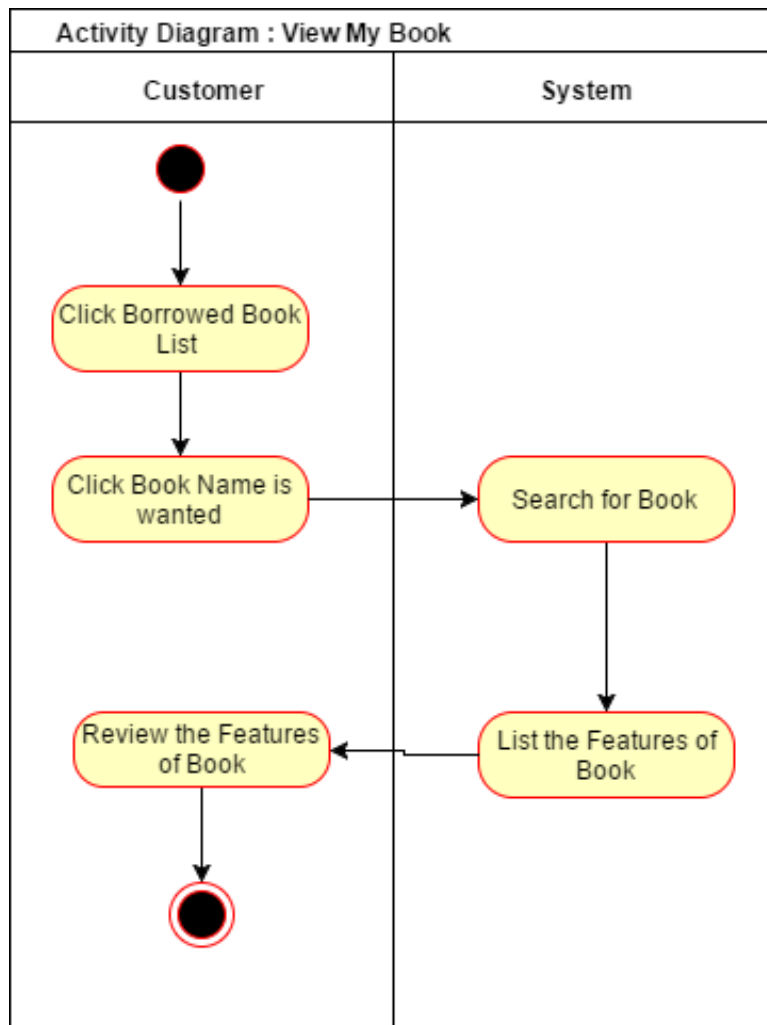
Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

Use Case 4 : Add name to book waiting list	
Actors	Customer
Precondition	1. Customer must be logged in.
Post-condition	1. Name is added to book waiting list
Main(happy) path:	1. The customer enters the book name or names 2. System adding name to waiting list
Alternative path:	



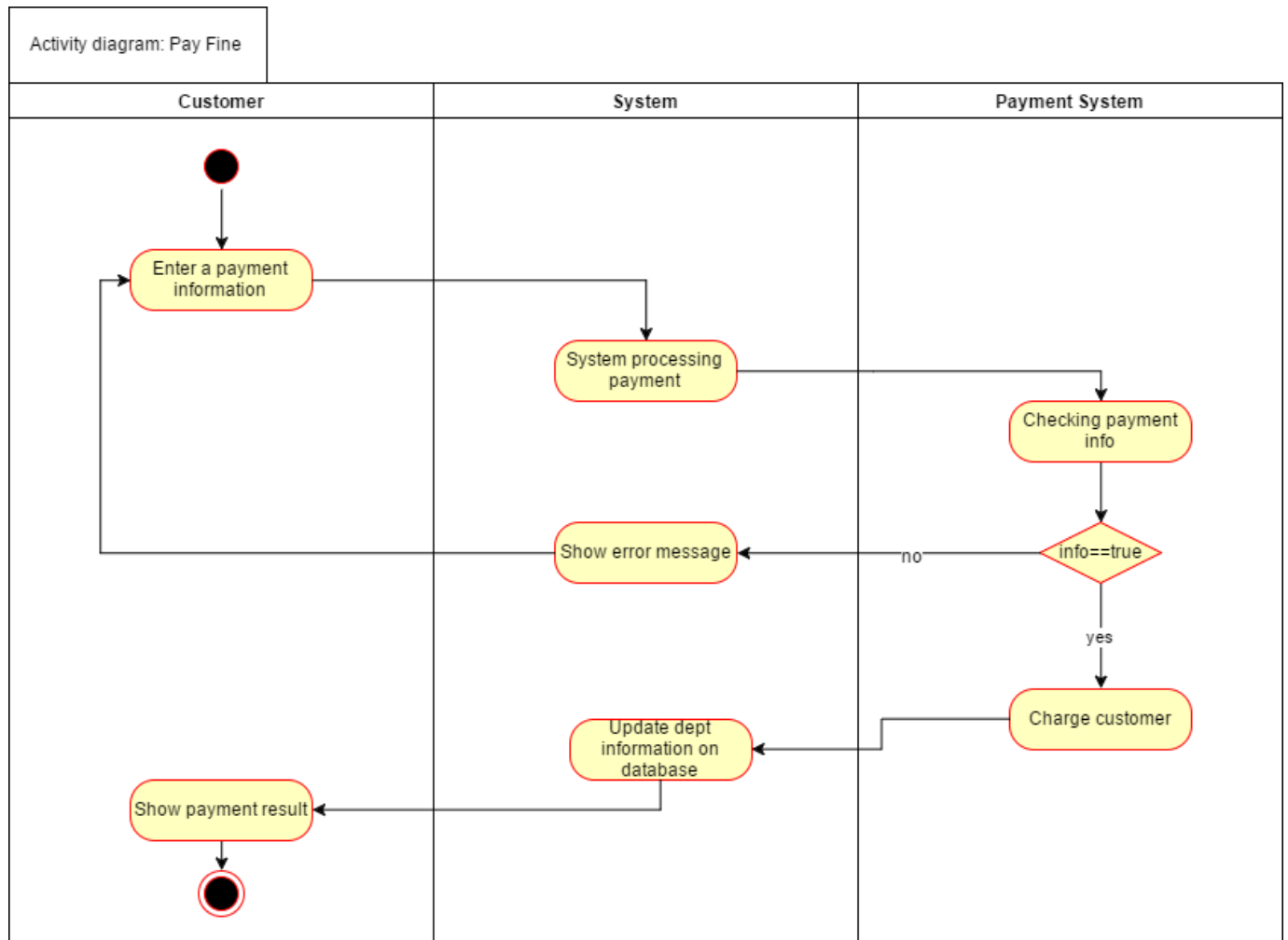
Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

Use Case 5 : View my Books	
Actors	Customer
Precondition	Customer is logged in but did not review the borrowed books yet.
Post-condition	Review the Book
Main(happy) path:	<ol style="list-style-type: none"> 1. Hit the Borrowed Book List. 2. System will show the Borrowed Book List 3. Customer selects any book and reviews that book.
Alternative path:	<ol style="list-style-type: none"> 1. If Customer has no books then system will show a warning message.



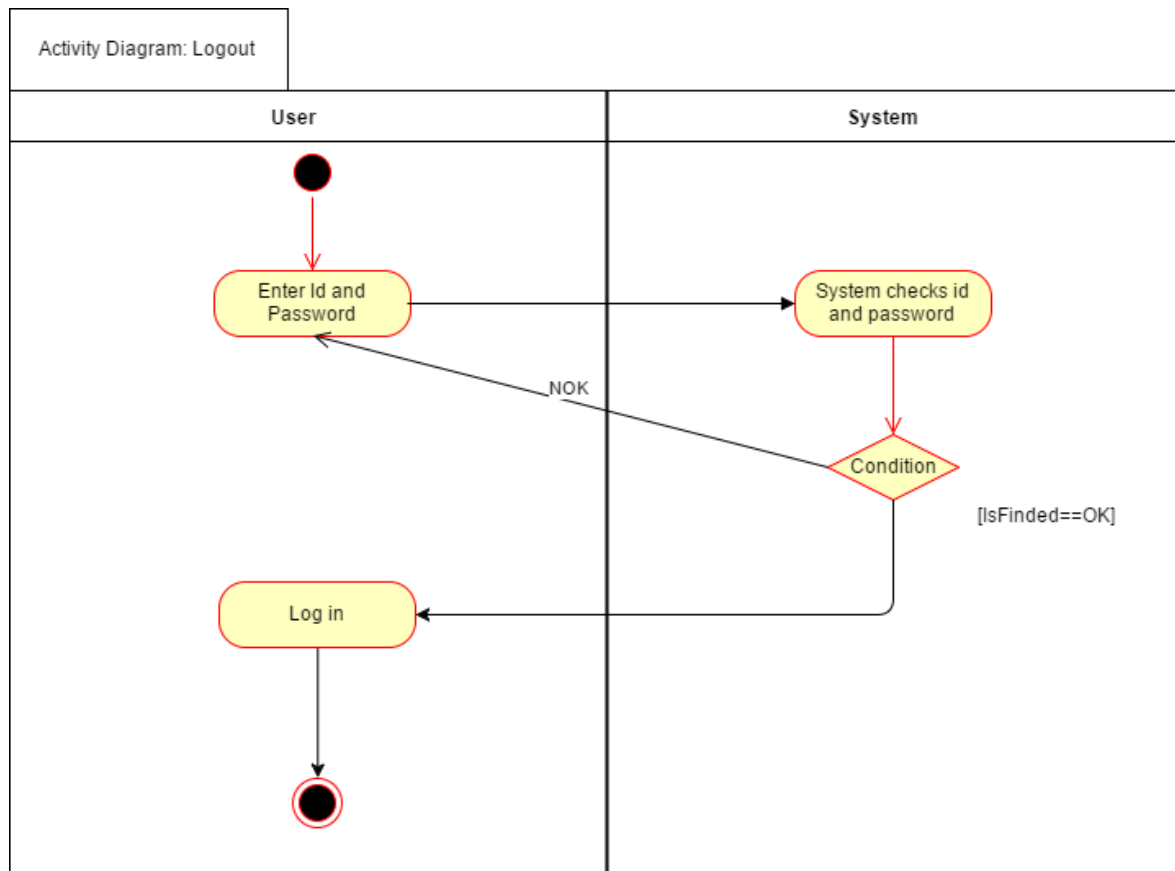
Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

Use Case 6 : Pay fine	
Actors	Customer
Precondition	<ol style="list-style-type: none"> 1. Customer must be logged in. 2. Customer must have a penalty fee.
Post-condition	Customer must not have a penalty fee.
Main(happy) path:	<ol style="list-style-type: none"> 1. The customer enters a payment information. 2. System processes payment. 3. Dept information of customer updates on database.
Alternative path:	<ol style="list-style-type: none"> 1. Payment information is not true. 2. Customer enters an information again.



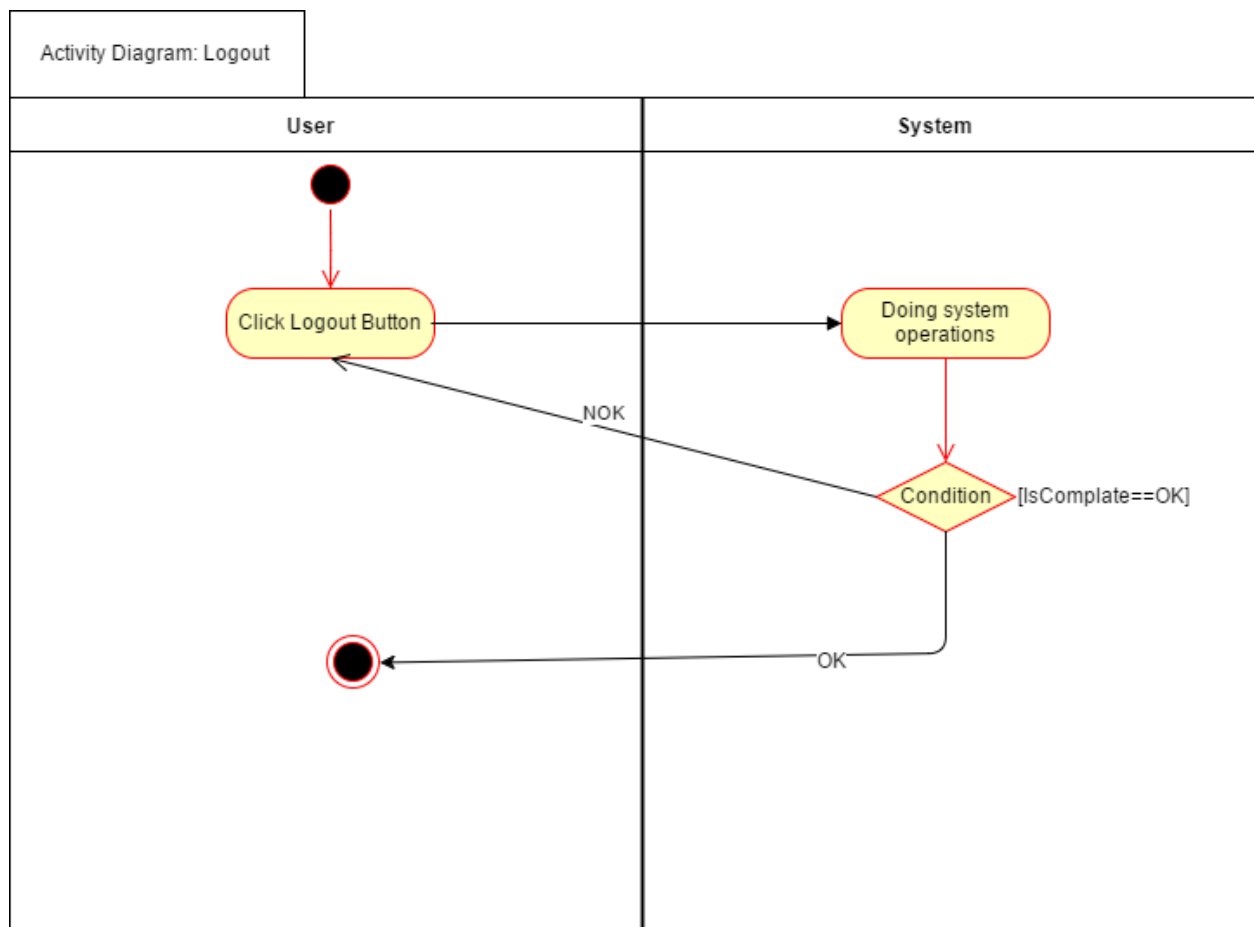
Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

Use case 7: Login	
Actors	Customer, Librarian
Precondition	User is not logged in
Post-condition	User is logged in
Main(happy) path	<ol style="list-style-type: none"> 1. User enters her/his username and password and presses on the Login button. 2. System checks the username and password and shows the app's main window(page) 3. User will be able to use the feature afterwards
Alternative path	<ol style="list-style-type: none"> 1. If the username and password combination is invalid, the system will Show a message indicating it 2. User will be able to enter another username and password



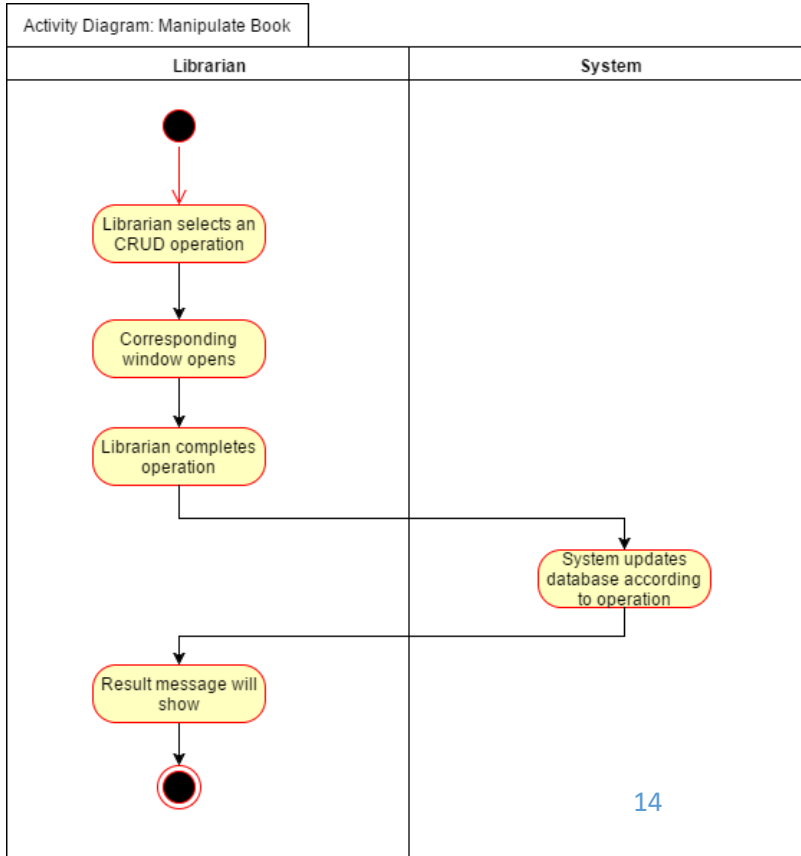
Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

Use case 8: Logout	
Actors	Customer, Librarian
Precondition	User is not logged out
Post-condition	User is logged out
Main(happy) path	<ol style="list-style-type: none"> 1. User presses on the Logout button. 2. System shows the app's login window(page)
Alternative path	<ol style="list-style-type: none"> 1. Close the application.



Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

Use Case 9 : Manipulate Book	
Actors	Librarian
Precondition	1. Librarian must be logged in.
Post-condition	<ul style="list-style-type: none"> - New book will be added - Existing book will be edited - Existing book will be deleted
Main(happy) path:	<ol style="list-style-type: none"> 1. Librarian selects an operation. <ul style="list-style-type: none"> - Book adding <ol style="list-style-type: none"> 2. Librarian enters a book information on a opened window. 3. System creates new book on the database. - Book editing <ol style="list-style-type: none"> 2. Librarian edits a book information on a opened window. 3. System updates a book data on the database. - Book deleting <ol style="list-style-type: none"> 2. Librarian selects the delete button. 3. System deletes book from the database. 4. Result message will show.
Alternative path:	



Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

Use case 10: Manipulate User	
Actors	Librarian
Precondition	Any librarian should be open to the system.
Post-condition	Manipulate users.
Main(happy) path	<ol style="list-style-type: none"> 1. The librarian may create new members. 2. The librarian can delete a member or change his / her information by selecting a member. 3. Librarian members can search and book reservations.
Alternative path	<ol style="list-style-type: none"> 1. The librarian can not add the same member. 2. A librarian can not delete a non-member.

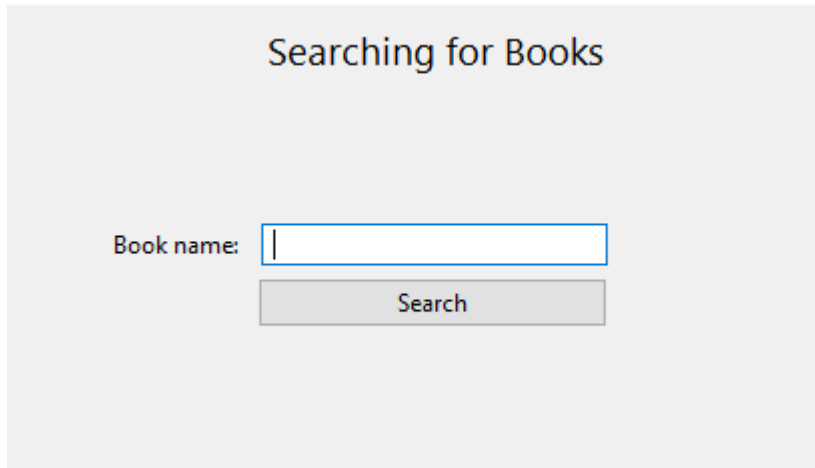
Use case 11: Issue late fine	
Actors	System Agent
Precondition	If the member does not return the book on time.
Post-condition	The member is punished.
Main(happy) path	<ol style="list-style-type: none"> 4. The member gets a fine of 18 cents for every day he does not bring the book.
Alternative path	<ol style="list-style-type: none"> 3. All members bring back the book on time.

Use case 12: Notify of book being available	
Actors	System Agent
Precondition	At least one book is on the waiting list.
Post-condition	Notify that the book is appropriate.
Main(happy) path	<ol style="list-style-type: none"> 3. When the book is available again, any member checks whether this book is waiting.
Alternative path	<ol style="list-style-type: none"> 2. If there is more than one book waiting, send notification to first waiting person.

Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

7. Appendix B

In this section we listed user interfaces according to our use cases.

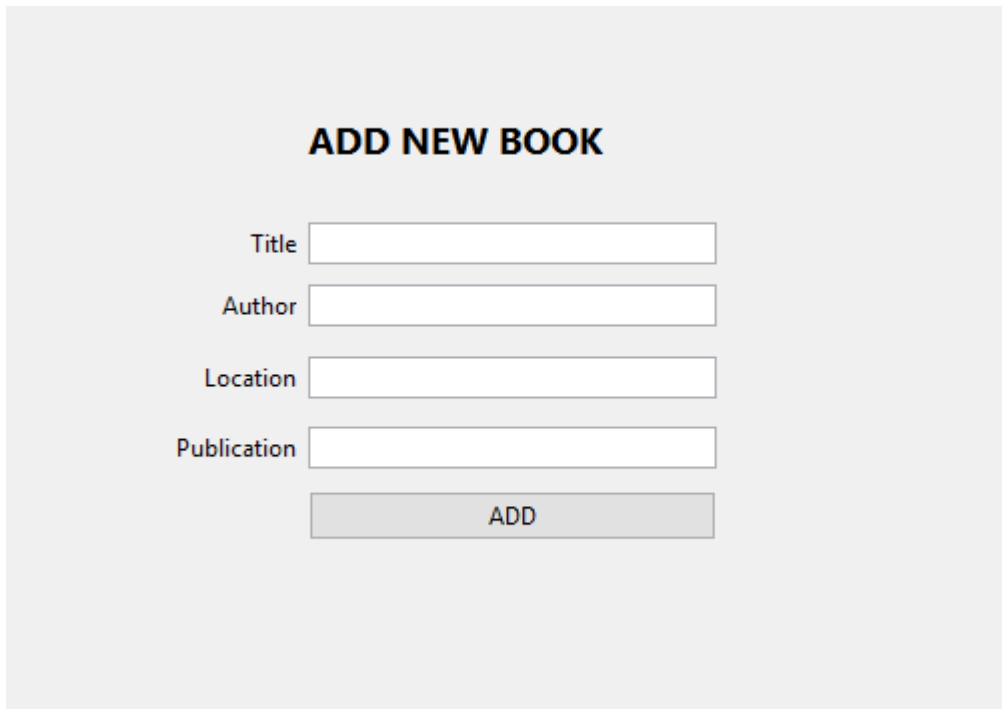


Searching for Books

Book name:

Search

Search for Books



ADD NEW BOOK

Title

Author

Location

Publication

ADD

Manipulate Book 1

Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

EDIT BOOK

Title

Author

Location

Publication

Manipulate Book 2

Enter the card information

Card no Total: TL 12.5

CCV mm yy


Pay Fine

Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS


Barcode input for self return

Barcode


Barcode input



User Name

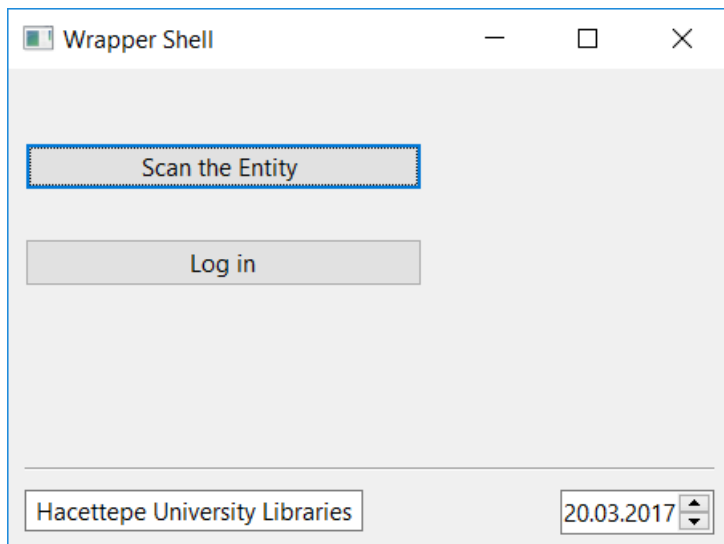
 **List My Books**

Hacettepe Universitesi Libraries

20.03.2017 

List my books

Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS



Wrapper Shell

Scan the Entity

Log in

Hacettepe University Libraries

20.03.2017

Self checkout



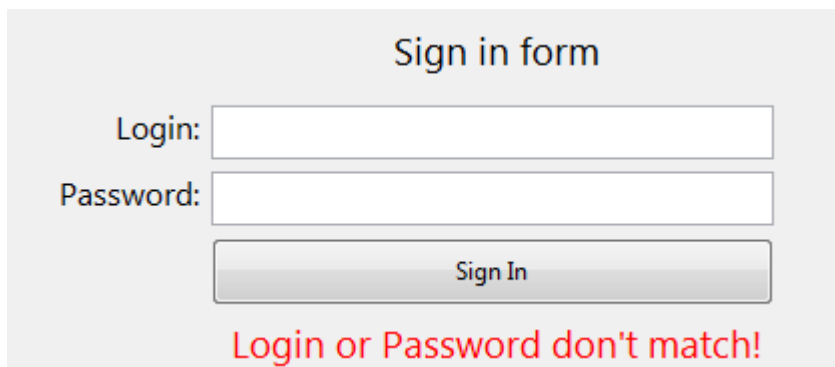
Sign in form

Login:

Password:

Sign In

Login



Sign in form

Login:

Password:

Sign In

Login or Password don't match!

Incorrect login

Group 17	Date: 21/03/2017
Gismat Kazimli Burak Aykanat Rinat Davidov Alaaddin Ozer	SRS

9. Appendix C

