System Requirement Specification for

A Mobile Barter Shop

-EPIC FAIL-

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CHANGELOG

*A: Added, M: Modified, D: Deleted

Version number	Date	Section	A,M,D*	Title or Brief Description
Version 1.0	30/10/2013			Original.
Version 1.1	29/12/2013	Section 2.2	D	Content of Product Functions
		Section 2.2.1	M	Moved from 3.2.1
		Section 2.2.1	A	New use cases added to use case diagram
		Section 2.2.1.1	M	Moved from 3.2.1.1
		Section 2.2.1.2	M	Moved from 3.2.1.2
		Section 2.2.1.3	M	Moved from 3.2.1.3
		Section 2.2.1.4	M	Moved from 3.2.1.4
		Section 2.2.1.5	M	Moved from 3.2.1.5

		Section 2.2.1.6	M	Moved from 3.2.1.6
		Section 2.2.1.7	M	Moved from 3.2.1.7
		Section 2.2.1.8	M	Moved from 3.2.1.8
		Section 2.2.1.9	M	Moved from 3.2.1.9
		Section 2.2.1.10	M	Moved from 3.2.1.10
		Section 2.2.1.11	M	Moved from 3.2.1.11
		Section 2.2.1.12	M	Moved from 3.2.1.12
		Section 2.2.1.13	M	Moved from 3.2.1.13
		Section 2.2.1.14	M	Moved from 3.2.1.14
		Section 2.2.1.15	M	Moved from 3.2.1.15
		Section 2.2.1.16	M	Moved from 3.2.1.16
		Section 2.2.1.17	M	Moved from 3.2.1.17

		Section 2.2.1.18	M	Moved from 3.2.1.18
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		Section 2.2.1.24	A	Moved from 3.2.1.24
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		Section 2.2.1.26	A	Moved from 3.2.1.26
		Section 2.2.1.27	A	Moved from 3.2.1.27
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1   INTRODUCTION

1.1 Problem Definition

People or companies without cash money often having trouble to continue shopping or trading, especially at economic crisis. A system called barter which is basically an exchange system exist in foreign countries except for Turkey. 40 percent of world trade is done by barter system. The main challenge of the problem is, system basically needs two people with mutual wants.

1.2 Purpose

The purpose of this document is to present a detailed description of the **B-xchange**, an android application. It will explain the purpose and features of the system, interfaces of the system, what will the system do, the constraints under which it must operate and how the system will react to external stimuli. This document is intended for the acquirer which is the owner in this case.

1.3 Scope

This software system will be an android application for any people or any companies who want to use barter system in their daily life or for company interests. The system will be designed to help the user to:

- Put goods/services to the barter market
- Search for goods/services at the market
- Follow goods/services
- Manage previous trades/ exchange history

- Filter search according to geographic information
- Continue trade without having real money

1.4 Definitions, acronyms, and abbreviations

TERM	DEFINITON
Database	Collection of all the information monitored by this system.
User	Any person or company logged on the system.
Android	A mobile device operating system developed by Google Inc.
Social Media	Facebook or twitter.
IEEE	The Institute of Electrical and Electronics Engineers (IEEE) is a professional association headquartered in New York City that is dedicated to advancing technological innovation and excellence.
Software Requirements Specification (SRS)	A document that completely describes all of the functions of a proposed system and the constraints under which it must operate. For example, this document.
Eclipse IDE	Eclipse is a multi-language Integrated Development Environment comprising a base workspace and an extensible plug-in system for customizing the environment.

1.5 References

IEEE STD 830-1998,

IEEE Recommended Practice for Software Requirements Specifications IEEE Computer Society, 1998.

1.6 Overview

The next chapter, the Overall Description section, of this document gives an overview of the functionality of the product. It describes the general factors that affect the product and its requirements and is used to establish a context for the technical requirements specification in the next chapter.

The third chapter, Requirements Specification section, of this document is written primarily for the developers and describes in technical terms the details of the functionality of the product. This subsection of the SRS will list each of the factors that affect the requirements stated in the SRS.

Both sections of the document describe the same software product in its entirety, but are intended for different audiences and thus use different language.

The fourth chapter describes the information domain for the software such as data description, data objects.

The fifth chapter of this document will provide a description of the behavior of the software.

Last chapters of this document will contain Planning, team structure, a basic schedule, process model and conclusion part.

2   OVERALL DESCRIPTION

In this part, the system allow users to upload or search any desired items or services. For to do this, background information about specific requirements of the system will be provided briefly. In **B-xchange** the user can keep personal information of items, favorites, ratings etc. and then the application will run along and communicate with a database server and web-services running in between each part of the system.

2.1 Product Perspective

B-xchange is a mobile application with a web service in order to get shopping items or services. The mobile application will work on mobile Android devices. It will have functions as data managing, web based searching, items collecting (selling or favorites), messaging with users. When users run the application, they can use the functionalities the device. All information will be kept on database which can be accessed by users with or without login.

2.2 Product Functions

This section explains the use cases.

2.2.1 Use Cases

The user has these user cases.
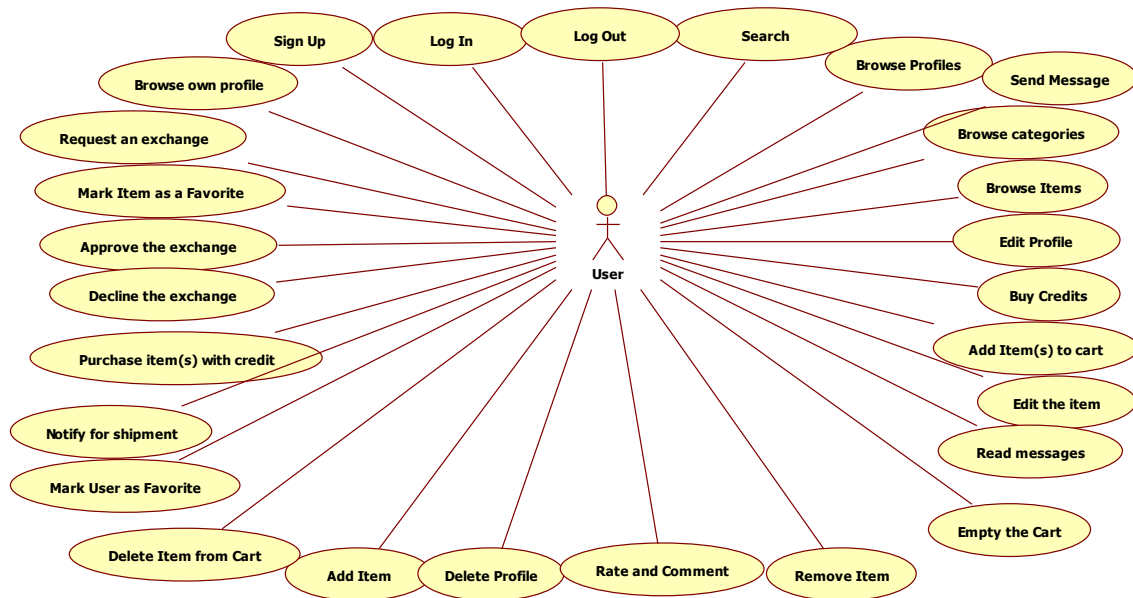
2.2.1.1   Use Case: Sign Up

In this case, user enters his/her username, name, surname, password, mail address sets a profile photo. When the user fills all necessary fields, an activation mail will be sent to users mail address. User will be able to log in and start using the system just after activating his/her account.

2.2.1.2   Use Case: Log In
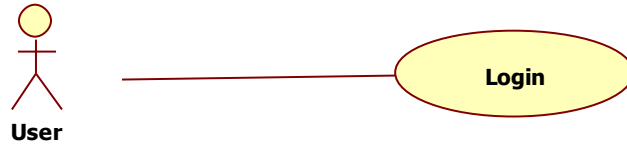
In this case, user enters his/her username or email and his/her password and logs in the system.

2.2.1.3   Use Case: Log Out

In this case, user touches log out button, and logs out of the system. The user will not use the system until he/she logs in again.

2.2.1.4   Use Case: Search

In this case, user is able to search items. User can search items according to their price, their location, their category.

2.2.1.5   Use Case: Browse Profiles
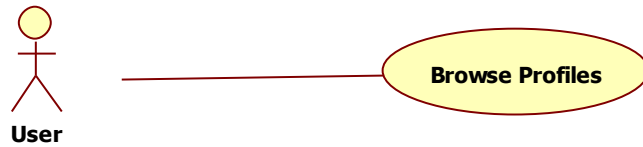
In this case, user is able to browse the profiles other users. User can see the other users' user names, profile photos, and the users' items.

2.2.1.6   Use Case: Browse Categories
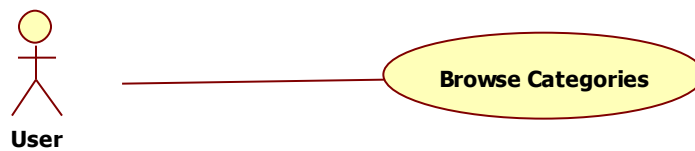
In this case, user is able to browse categories according to his/her wishes. User can also see how many items each category has.

2.2.1.7   Use Case: Browse Items
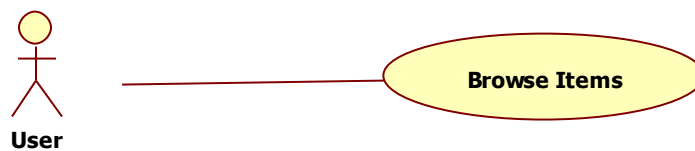
In this case, user is able browse items. User can see the items' pictures, prices, and other features.

2.2.1.8　　　Use Case: Edit Profile
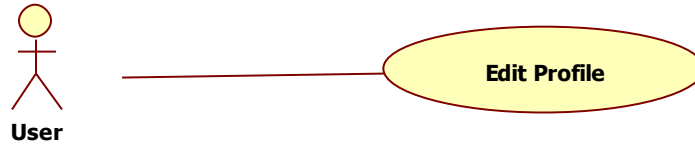
In this case, user can change his/her username, email address, profile picture and password. If the user changes his/her username or password, a notification mail will be sent to the user's email address. The changes will apply if the user clicks on the link in the email.

2.2.1.9　　　Use Case: Buy Credits
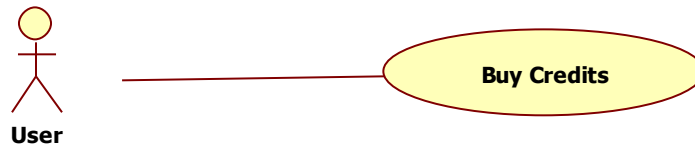
In this case, user can buy credits from the system. He/she can use credit card or his/her PayPal account.

2.2.1.10　　　Use Case:　Add Item(s) to Cart
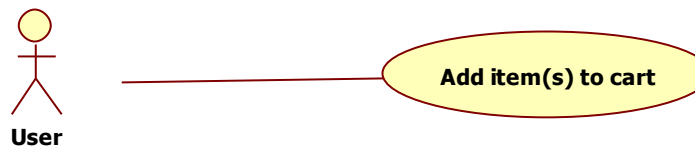
In this case, user can add the items he/she likes to his cart by touching "Add to the cart" button.

2.2.1.11 Use Case: Purchase Item(s) with Credit
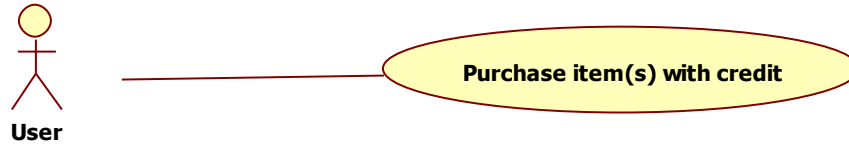
In this case, the user can buy items he/she has added to cart with credits, if the items are available for buying with credits.

2.2.1.12 Use Case: Request an Exchange
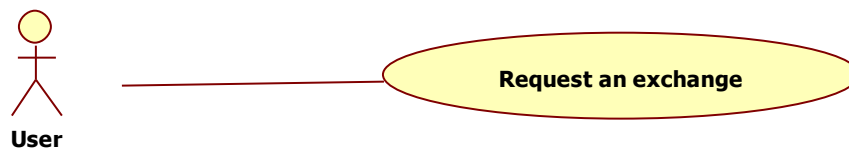
In this case, if the item the user wants is available for exchange, the user can request the exchange of items that he/she has with the item he/she wants.

2.2.1.13 Use Case: Approve the Exchange
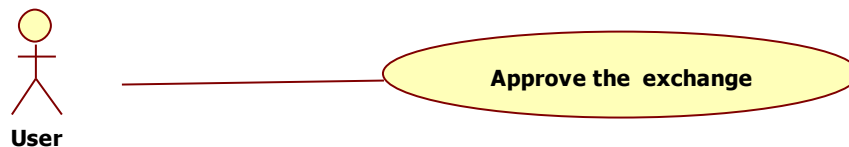
In this case, the user can approve the exchange that is offered by another user by clicking "Approve" button.

2.2.1.14 Use Case: Decline the exchange

```
 O
 人      ———————  ( Decline the  exchange )
User
```
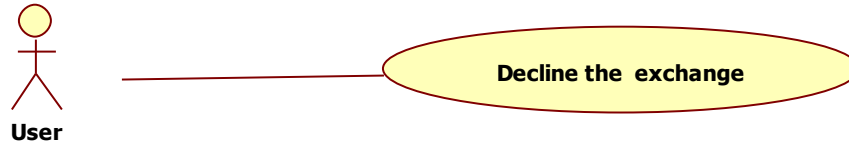
In this case, the user can decline the exchange that is offered by another user by clicking "Decline" button.

2.2.1.15 Use Case: Notify for Shipment

```
 O
 人      ———————  ( Notify for shipment )
User
```
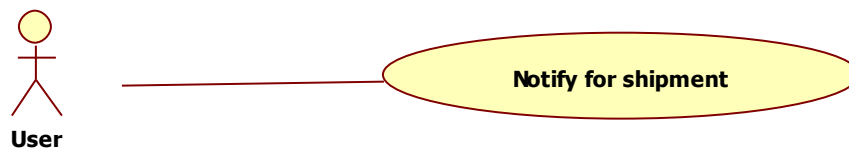
In this case, the user notifies other user that the shipment of the item has started.

2.2.1.16 Use Case: Add Item

```
 O
 人      ———————  ( Add Item )
User
```
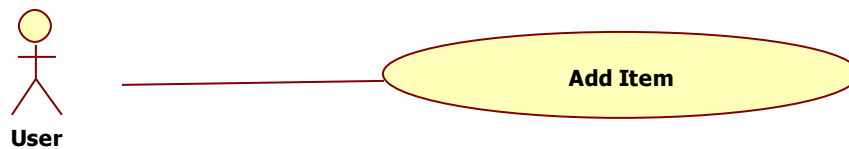
In this case, the user can add as many as items he/she wants. The user can also set the price, set the amount, upload pictures of the item and add details of the item.

2.2.1.17　　Use Case: Edit Item
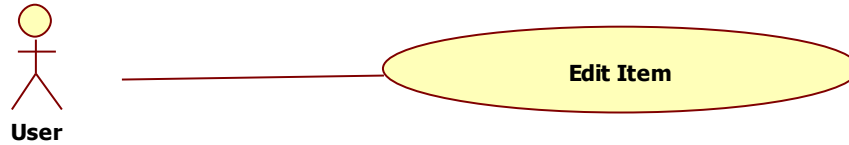
In this case, the user can edit the items that he/she has already put on the system. The user can add/remove pictures, change the price and details of the item.

2.2.1.18　　Use Case: Remove Item
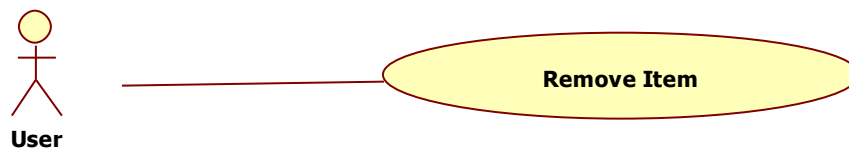
In this case, if the user no longer wishes to sell/exchange the item, he/she can remove the item from the system by touching "Remove the item" button.

2.2.1.19　　Use Case: Delete Profile
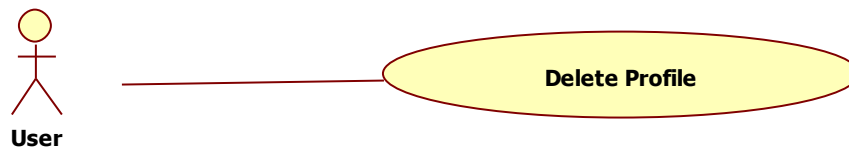
In this case, if the user no longer wishes to use the system, he/she can click "Delete Profile" button. After deleting the profile, the user will no longer be able to use the system with the account details that he entered before.

2.2.1.20　　　Use Case: Mark as a Favorite
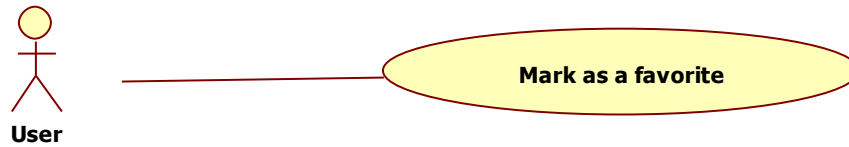
In this case, the user can mark an item as a favorite so that he will be notified if any change is made to the item

2.2.1.21　　　Use Case: Rate and Comment
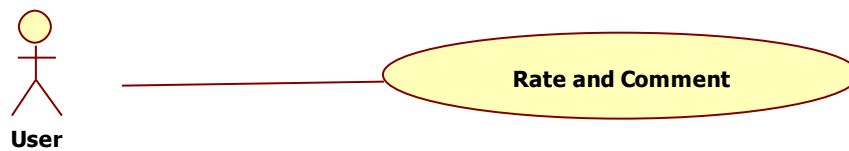
In this case, the user can rate and comment about the users whom he traded with.

2.2.1.22　　　Use Case: Browse user's own profile
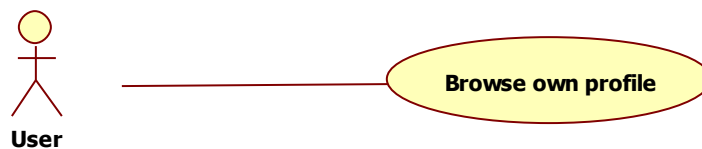
In this case, the user can view his/her own profile, the user can view his/her rating, inbox notifications, favorite items, items for sale, favorite sellers.

2.2.1.23　　Use Case: Read Messages
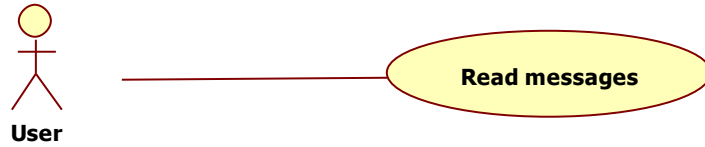
The user can read the messages sent from other users and his/her own messages sent by himself.

2.2.1.24　　Use Case: Send Message
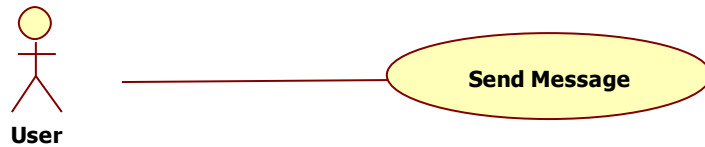
The user can send messages to other users for bargaining and for exchange requests.

2.2.1.25　　Use Case: Mark User as Favorite
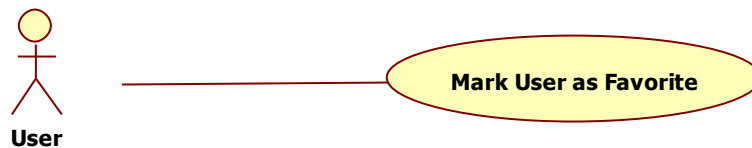
The user can mark other users as favorite. He will be able to see the changes about the favorite users.

2.2.1.26　Use Case: Delete Item from Cart
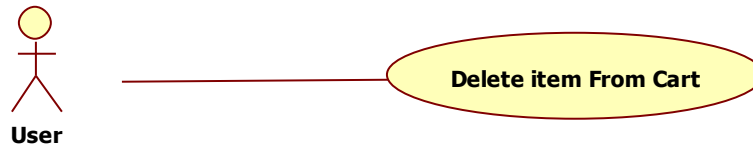
The user can delete items from his/her cart.

2.2.1.27　Use Case: Empty the Cart
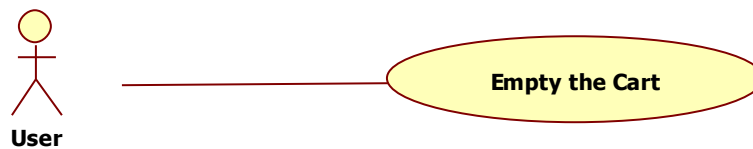
The user is able to delete all items from his/her cart with just one function.

2.3 Constraints, Assumptions and Dependencies

Users of this application are any Android device user that loads this application to their devices. All of the users are in the same class, only one type of user exists. Operating environment is, as just mentioned above, is an Android OS mobile device. An android device that can support basic dependencies of the application is expected for proper user experience. On the other hand, our database server and services can operate on any OS like Windows or Ubuntu that can supply the database server's fundamental dependencies and needs. One important constraint is privacy and security. Users should be accessing only the authenticated data.

3   SPESIFIC REQUIREMENTS

In this chapter and its sections, the requirements are explained.

3.1 Interface Requirements

There will be two interfaces in our system, one will be between user and system, and the other will be between system and database.

3.2 Functional Requirements

3.2.1 Sign Up

Use Cases	Sign Up
Reference	Section 2.2.1
Actor	User, Guest
Trigger	He/she touches the "Register" button.
Precondition	No precondition.
Post Condition	He/she has signed up.
	1. He/she presses "Register" button. 2. The system directs him/her to register page to fill in the blanks with personal information.

Basic Path	3. He/she enters first and last name. 4. He/she enters username and password. 5. He/she confirm password by reentering. 6. He/she enters email contact address. 7. He/she touches the submit button to finish registration part. 8. The system checks username that someone already has. 9. The system checks unfilled fields. 10. The system checks the email format and validate the address. 11. The system sends he/she successful message. 12. The system directs him/her to main page.
Alternative Path	He/she presses "Register" button at any page after touching "Take a Tour" button.
Exception Path	1. If the system finds blank field(s) in register form then he/she is warned and request to fill them. 2. If the system does not match password with reentering one then he/she is warned and request to fix them. 3. If the system finds duplicate username then he/she is warned and request to enter different username.

	4. If the system finds wrong email format or invalid email then he/she is warned and request to enter different email.
Other	None.

3.2.2 Log In

Use Cases	Log In
Reference	Section 2.2.2
Actor	User
Trigger	The user touches the "Sign In" button.
Precondition	The user has already signed up.
Post Condition	The user has signed in.
Basic Path	1. The user touches "Sign In" button. 2. The system directs user to register page to fill in the blanks. 3. The user enters username and password. 4. The user touches the button. 5. The system checks that username and password are valid. 6. The system directs user to main page.

Alternative Path	The user presses "Sign In" button at any page after touching "Take a Tour" button.
Exception Path	1. If the system does not find username in database then user is warned and request to enter correct username. 2. If the system finds wrong user's password then user is warned and request to enter correct password.
Other	None

3.2.3   Log Out

Use Cases	Log Out
Reference	Section 2.2.3
Actor	User
Trigger	The user touches the "Log Out" button.
Precondition	The user has already signed in.
Post Condition	The user has signed out.
Basic Path	1. The user presses "Log Out" button. 2. The system directs user to main page.

Alternative Path	The user exit from the application.
Exception Path	None.
Other	None.

3.2.4   Search

Use Cases	Search
Reference	Section 2.2.4
Actor	User, Guest
Trigger	He/she write information about item in search box then he/she touches the "Search" button
Precondition	No precondition.
Post Condition	He/she directs to search results page.
Basic Path	4 He/she touches search box to write information about item. 5 He/she presses "Search" button next to search box. 6 The system directs him/her to search result page.

Alternative Path	1. He/she touches search box to write information about item. 2. He/she can choose category to search item in category. 3. He/she presses "Search" button next to search box. 4. The system directs him/her to search result page.
Exception Path	None.
Other	None.

3.2.5   Browse Profile

Use Cases	Browse Profile
Reference	2.2.5
Actor	User
Trigger	The user touches the others' username.
Precondition	The user has already signed in.
Post Condition	The user directs to others profile page.
	1. The user searches any query to go search result page.

Basic Path	2. He/she touches the any item from search result page. 3. The system directs him/her to item profile page. 4. He/she touches the seller's username and then he/she goes to other profile.
Alternative Path	1. The user touches the "My Account" button. 2. He/she goes to favorite seller's page when he/she touches the "Favorite Sellers" button. 3. He/she touches the sellers' username to goes to other profile page.
Exception Path	None.
Other	None.

3.2.6   Browse Categories

Use Cases	Browse Categories
Reference	2.2.6
Actor	User, Guest
Trigger	He/she touches the "Search" button with blank search box.

Precondition	No precondition.
Post Condition	He/she directs category page.
Basic Path	1. The user touches the "Category" dropdown button. 2. He/she chooses one which you want. 3. He/she touches the "Search" button. 4. The system directs him/her to category page.
Alternative Path	None.
Exception Path	None.
Other	None.

3.2.7   Browse Items

Use Cases	Browse Items
Reference	2.2.7
Actor	User
Trigger	The user touches items from search result page or from favorite items.

Precondition	The user has already signed in. For alternative path he/she marks any item as favorite.
Post Condition	The user directs to item profile page.
Basic Path	1. The user searches any query to go search result page. 2. He/she touches the any item from search result page. 3. The system directs him/her to item profile page.
Alternative Path	1. The user touches the "My Account" button. 2. In his/her profile page, he/she touches the favorite items. 3. The system directs him/her to list of favorite items and he/she goes to item profile when he/she touches the any item's name. 4. The user also goes to item profile, when he/she touches the any items from my item list.
Exception Path	If the item remove from database, the system directs him/her to non-result page.

Other	None.

3.2.8 Edit Profile

Use Cases	Edit Profile
Reference	2.2.8
Actor	User
Trigger	The user touches the "Account settings" button.
Precondition	The user has already signed in.
Post Condition	The user changes personal information.
Basic Path	1. The user touches the "My Account" button at main page or touches the name at any page. 2. He/she touches the "Account Settings" button on profile page.
Alternative Path	None.
Exception Path	None.
Other	None.

3.2.9   Buy Credit

Use Cases	Buy Credit
Reference	2.2.9
Actor	User
Trigger	The user touches the "Take some Bx"
Precondition	The user has already signed in.
Post Condition	The user's credit amount will increase.
Basic Path	1. The user touches the "Take some Bx" at any page. 2. The system directs him/her to buying credit page. 3. The user write amount to the text box which how much he/she wants. 4. The user provides credit card information in the provided field such as credit card number, expire date, CVC2 code etc. 5. He/she touches the "Buy" button to confirm process.
Alternative Path	None.

Exception Path	If the user gives the wrong credit card information, the user is warned and requested to fix them.
Other	None.

3.2.10   Add Item(s) to Cart

Use Cases	Add Item(s) to Cart
Reference	2.2.10
Actor	User
Trigger	The user touches the cart symbol.
Precondition	The user has already signed in.
Post Condition	The item adds to his/her cart.
Basic Path	1. He/she touches search box to write information about item. 2. He/she presses "Search" button next to search box. 3. The system directs him/her to search result page. 4. He/she touches the item which he/she wants

	5. The system directs him/her to item page profile.
	6. If the user decides to buy item with Bx coin, he/she touches the cart symbol during item profile page.
Alternative Path	The user can add item to cart from favorite items page.
Exception Path	None.
Other	None.

3.2.11 Purchase Item(s) with Credit

Use Cases	Purchase Item(s) with Credit
Reference	2.2.11
Actor	User
Trigger	The user touches the cart symbol on his/her profile page.
Precondition	The user has already signed in and add item(s) to cart before.
Post Condition	The user buy items which he/she add to cart.

	The system send information to seller about buying.
Basic Path	1. The user touches his/her own username. 2. Profile page appears on the screen and then touches the cart symbol to finish shopping. 3. Purchase page appears on the screen. 4. The user can edit items which he/she added to cart. 5. The user can see how much total shopping and his/her Bx coin amount. If his/her Bx coins are not enough, he/she can buy more. 6. When he/she touches the "Confirm" button, he/she buy all items in cart.
Alternative Path	None.
Exception Path	If his/her Bx coins are not enough to buy items, the system warn user and directs him/her to buy credit page.
Other	None.

3.2.12   Request an Exchange

Use Cases	Request an Exchange
Reference	2.2.12
Actor	User
Trigger	The user sends messages to request an exchange.
Precondition	The user has already signed in and has got item for exchange.
Post Condition	He/she send request message to seller.
Basic Path	1. The user goes to his/her own profile page. 2. He/she touches the "Messages" button. 3. At new mail section, he/she sends request with giving details about exchange.
Alternative Path	1. The user touches the "Exchange" button on the item profile page. 2. The system directs him/her to messages page. 3. At new mail section, he/she sends request with giving details about exchange.

Exception Path	If the system may not find other user or item, the user is warned.
Other	None.

3.2.13   Approve the Exchange

Use Cases	Approve the Exchange
Reference	2.2.13
Actor	User
Trigger	The user touches the "Approve" button.
Precondition	The user has already signed in.
Post Condition	The exchange process is finished.
Basic Path	1. Users send approve form to each other. 2. When the exchange process is completed by users, both of them touches the "Approve" button. 3. Item profile remove from search results.
Alternative Path	None.
Exception Path	One of them decline the exchange because of not deliver item to him/her. So, after

	admin checks this situation true or not, user who did not send item, has to pay cost with his/her Bx coins.
Other	None.

3.2.14   Decline the Exchange

Use Cases	Decline the Exchange
Reference	2.2.14
Actor	User
Trigger	The user touches the "Decline" button or send mail to other before sending item.
Precondition	The user has already signed in and sent approve form to him/her.
Post Condition	The user cancels exchange process.
Basic Path	1. He/she goes to his/her own profile page. 2. He/she touches the "Messages" button. 3. From inbox section, he/she touches the "Decline" button.
Alternative Path	None.

Exception Path	None.
Other	None.

3.2.15   Notify for Shipment

Use Cases	Notify for Shipment
Reference	2.2.15
Actor	User
Trigger	The user touches the "Notify for shipment" button.
Precondition	The user has already signed in and sent item with cargo.
Post Condition	Buyer can track your cargo.
Basic Path	1. The user touches the "Notify for shipment" button. 2. He/she write product id which he/she takes from cargo firm. 3. He/she sends to the buyer by touching "Send" button.
Alternative Path	None.
Exception Path	None.
Other	None.

3.2.16   Add Item

Use Cases	Add Item
Reference	2.2.16
Actor	User
Trigger	The user touches the plus button on profile page.
Precondition	The user has already signed in.
Post Condition	New Item profile page publish on application.
Basic Path	1. The user touches the plus button on his/her own profile page. 2. Add item wizard appears with 5 steps. 3. In first step, "Photos", the user uploads picture of the item which describes. 4. In second step, "Title and Category", he/she writes title and chooses category, brand and models in order to appear in correct search result. 5. In the third step, "Description", he/she writes condition items, item specifics and description to give information for other users about item.

	6. In the fourth step, "Preferences", the user decides to buying format (exchange, buy) and price. Moreover he/she fill the preferences text box.
	7. In the last step, "Publish", the user the last version of new item profile page.
	8. When he/she touches the "Submit" button, he/she publish page.
Alternative Path	None.
Exception Path	After the system find wrong, incomplete or in appropriate publishing page, the system send mail to the user about why it is wrong. Until fixing that, page will not be published.
Other	None.

3.2.17   Edit Item

Use Cases	Edit Item
Reference	2.2.17
Actor	User
Trigger	The user touches the "Edit" button which is next to the item on the Item List Page.

Precondition	The user has already signed in and added one or more item to the item list for publishing.
Post Condition	If the system approve alters which he/she did, item page profile will change.
Basic Path	1. The user touches the "Edit" which is next to the item on the Item List Page. 2. The system directs him/her to edit item wizard as same add item wizard. 3. He/she adds or delete photo. 4. He/she changes title, category, brand or model. 5. He/she extends or constrict descriptions, item specifics and condition items. 6. He/she changes buying format (exchange, buy), price and preferences. 7. Finally, he/she touches the "Confirm Edit" button.
Alternative Path	None.
Exception Path	After the system find wrong, incomplete or in appropriate publishing page, the system send mail to the user about why it is wrong.

	Until fixing that, page will not be published.
Other	None.

3.2.18   Remove Item

Use Cases	Remove Item
Reference	2.2.18
Actor	User
Trigger	The user touches the "Delete" button next to "Edit" button on the Item List Page.
Precondition	The user has already signed in and added one or more item to the item list for publishing.
Post Condition	The item profile remove from search result page.
Basic Path	1. The user touches the "Delete" button. 2. Confirm screen appears. 3. If the user touches "Ok" button, item profile page will remove. 4. If he/she touches the "Cancel" button, the system directs him/her to Item List Page.

Alternative Path	None.
Exception Path	None.
Other	None.

3.2.19   Delete Profile

Use Cases	Delete Profile
Reference	2.2.19
Actor	User
Trigger	The user touches the "Delete Profile" button on account settings.
Precondition	The user has already signed in.
Post Condition	The user profile deletes from database.
Basic Path	1. The user touches the "Delete Profile" button. 2. Confirm screen appears. 3. If the user touches "Ok" button, item profile page will remove. 4. If he/she touches the "Cancel" button, the system directs him/her to Item List Page.

Alternative Path	If the user does not enter the application in thee moths, the system blocked account automatically.
Exception Path	None.
Other	None.

3.2.20 Mark as a Favorite

Use Cases	Mark as a Favorite
Reference	2.2.20
Actor	User
Trigger	The user touches the star on others' item profile page.
Precondition	The user has already signed in.
Post Condition	Item adds his/her favorite items list.
Basic Path	1. The user touches the star on others' item profile page. 2. The Item adds his/her favorite items list. 3. The user can edit favorite items list from his/her own profile page.

Alternative Path	None.
Exception Path	If the system realizes duplicate item in favorite list, the user is warned with warning writing, "The item has already been in your favorite list"
Other	None.

3.2.21   Rate and Comment

Use Cases	Rate and Comment
Reference	2.2.22
Actor	User
Trigger	The user touches the "Comment" button and choose rate stars.
Precondition	The user has already signed in and exchanged or bought something.
Post Condition	Seller's rating change with respect to giving rating and comment adds seller's comment page.
Basic Path	1. The user touches the comment button, after the shopping process.

	2. He/she writes comment and rates the seller or just rates him/her without comment.
	3. The user touches the "Send Comment" button, after he/she finish this process.
	4. Seller's rating change with respect to giving rating and comment adds seller's comment page.
Alternative Path	None.
Exception Path	None.
Other	None.

3.2.22 Browse User's Own Profile

Use Cases	Browse User's Own Profile
Reference	Section 2.2.22
Actor	User
Trigger	The user touches the "My Account" button.
Precondition	The user has already signed in.
Post Condition	The user directs to my profile page.
	1. The user touches "My Account" button.

Basic Path	2. The system directs user to profile page.
	3. The user can arrange your items, favorite lists, messages and account settings.
Alternative Path	1. The user touches your username at any page.
	2. The system directs user to profile page.
Exception Path	None.
Other	None.

3.2.23 Read Messages

Use Cases	Read Messages
Reference	2.2.23
Actor	User
Trigger	The user touches the inbox section in messages page.
Precondition	The user has already signed in.
Post Condition	The user reads messages.
Basic Path	1. The user touches "Inbox" button

	2. Inbox page appears on the screen.
	3. The user can see new messages with bold writing.
	4. He/she touches the read messages to open and read.
	5. He/she touches the unread messages to read. After this process, mail turned greyed and insignificant like read messages.
	6. He/she edit all messages by selecting them.
Alternative Path	None.
Exception Path	None.
Other	None.

3.2.24   Send Message

Use Cases	Send Message
Reference	2.2.24
Actor	User

Trigger	The user touches the "New mail" and "Send" button.
Precondition	The user has already signed in.
Post Condition	User sends mail to others.
Basic Path	1. The user touches the "New Mail" 2. New mail page appears on the screen. 3. The user fill contact, title and message area. 4. He/she can send this mail by touching "Send" button.
Alternative Path	None.
Exception Path	1. If the system finds blank field(s) in new mail page then he/she is warned and request to fill them. 2. If the system does not exist username then he/she is warned and request to fix it.
Other	None.

3.2.25   Mark User as Favorite

Use Cases	Mark User as Favorite
Reference	2.2.25
Actor	User
Trigger	The user touches the star on others' profile page.
Precondition	The user has already signed in.
Post Condition	User adds his/her favorite sellers list.
Basic Path	7. The user touches the star on others' profile page. 8. The seller adds his/her favorite item list. 9. The user can edit favorite sellers list from his/her own profile page.
Alternative Path	None.
Exception Path	If the system realizes duplicate user in favorite list, the user is warned with warning writing, "The user has already been in your favorite list"
Other	None.

3.2.26   Delete Item from Cart

Use Cases	Delete Item from Cart
Reference	2.2.26
Actor	User
Trigger	The user touches the "Delete" button.
Precondition	The user has already signed in and added item to cart.
Post Condition	The item removes from cart.
Basic Path	1. The user touches the cart symbol in his/her own profile page. 2. The system directs him/her to purchase page. 3. He/she selects item by touching check box. 4. He/she touches the "Delete" button. 5. Items remove from list and then update total Bx coins.
Alternative Path	None.
Exception Path	If the user touches the "Delete" button without selecting something, the system

	give error messages to select something from list.
Other	None.

3.2.27   Empty the Cart

Use Cases	Empty the Cart
Reference	2.2.27
Actor	User
Trigger	The user log out from application.
Precondition	The user has already signed in.
Post Condition	All items remove from his/her cart.
Basic Path	1. The user log out from application. 2. All items remove from his/her own cart.
Alternative Path	None.
Exception Path	If the user returns in 30 min, all items remove from his/her own cart.
Other	None.

3.3   Non-Functional Requirements

For running the system, Eclipse should be installed on the computer. In addition, JDK, JVM or JRE must be installed too.

3.3.1 Performance Requirements

10000 users should be able to use the system at the same time. The response time of the system should be 2 seconds at most.

3.3.2 Design Constraints

We will use "waterfall method" and Object – Oriented Programming paradigm. We will use Java as programming language. The Android version of the device should be 2.3 or higher. The system requires Internet connection all the time.
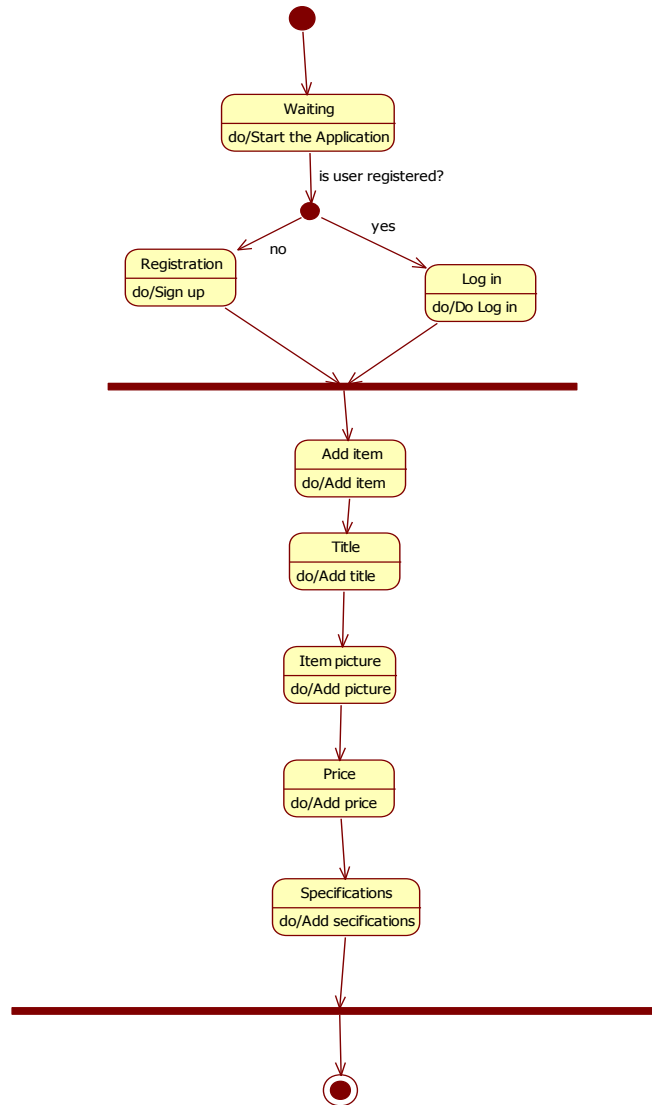
4   Behavioral Model and Description

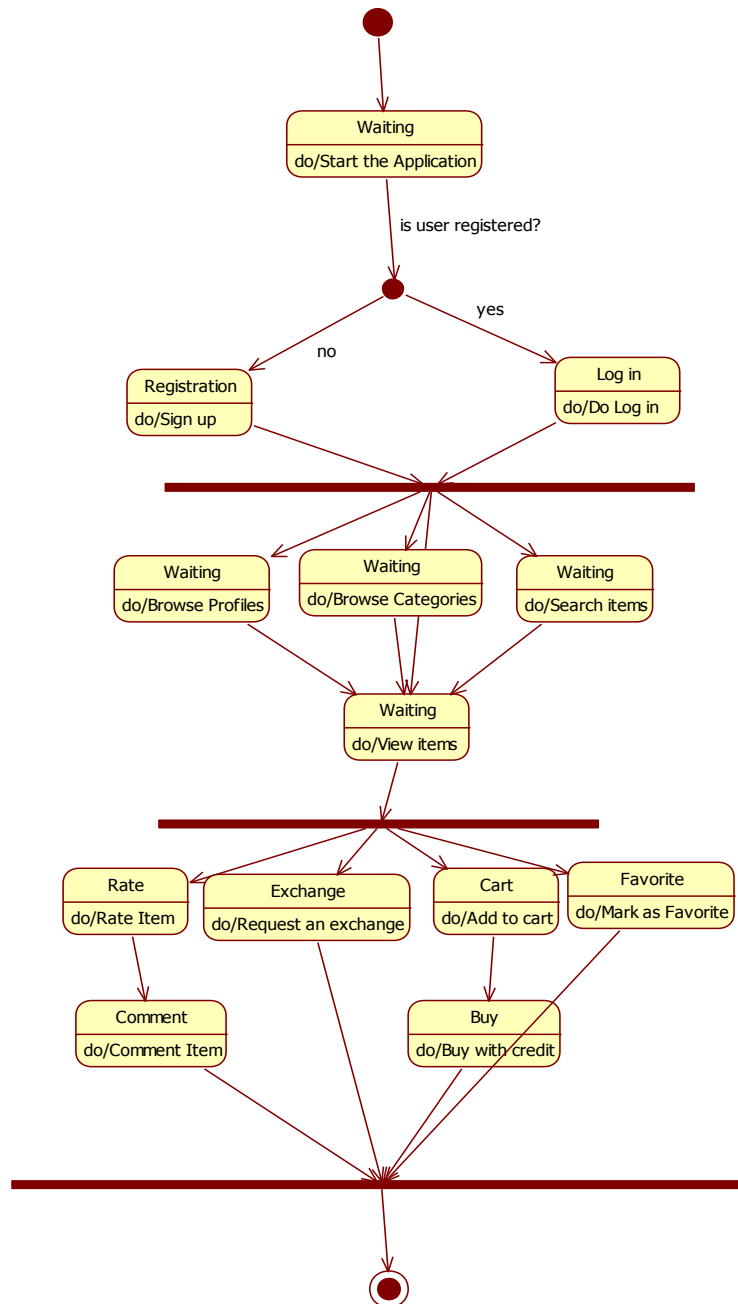## 4.1 Description of Software Behavior

Once the user downloads the application a screen with two buttons appear. These buttons redirect user either to register or login page. After user logs in or registers, he/she can do all actions explained in use-cases.
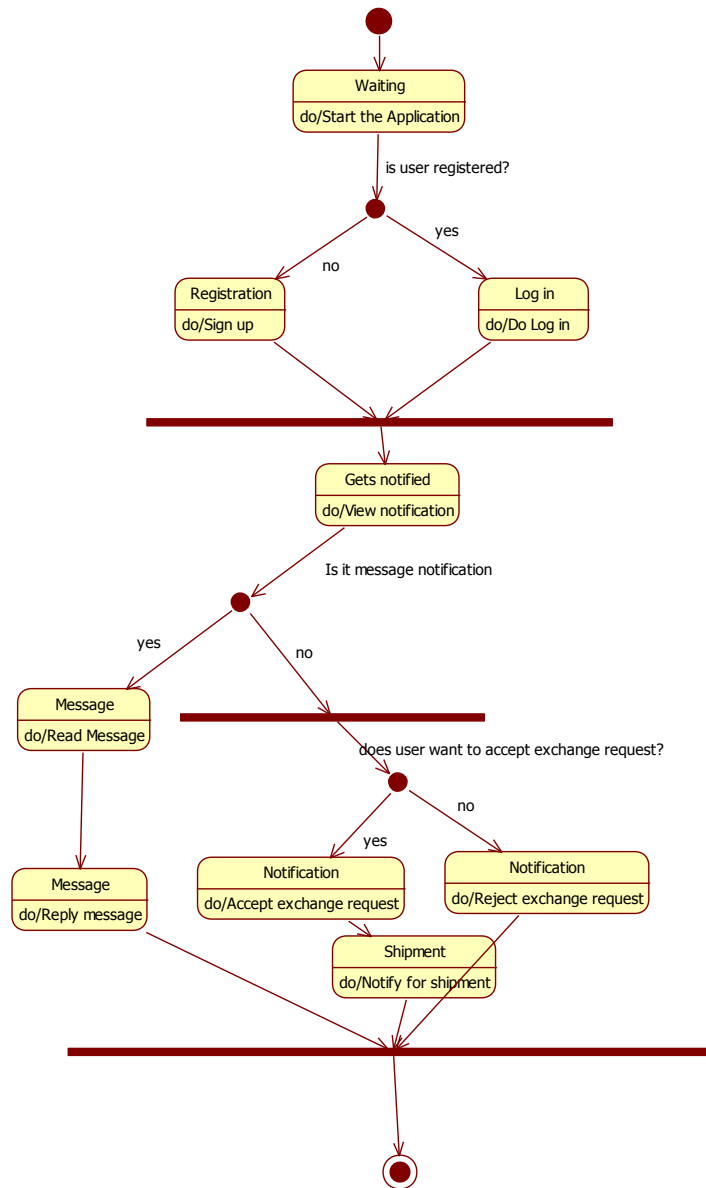
4.2 State Transition Diagram
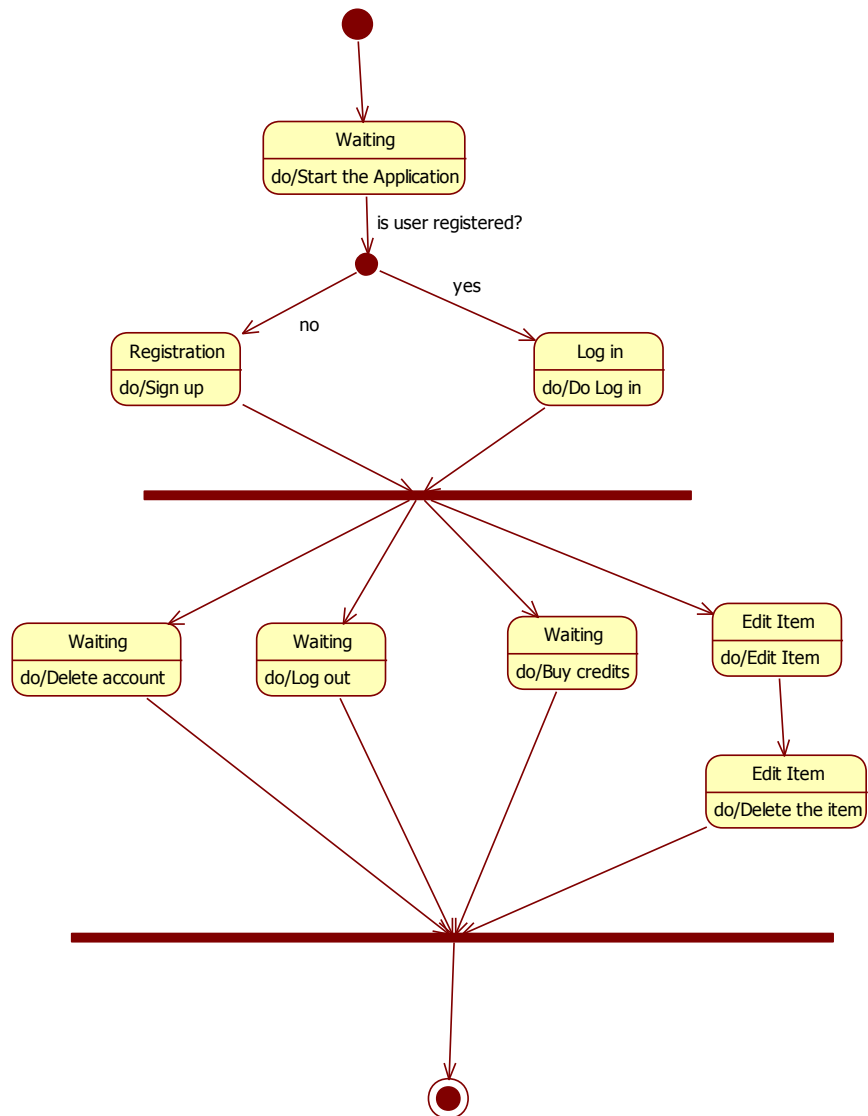
4.2.1 Adding Item

4.2.2 Viewing, Rate, Comment, Add to Cart, Marking items as Favorite

4.2.3 Accepting and Rejecting Exchange Request

4.2.4 Deleting Account, Logging Out, Editing Item, Buying Credits

Waiting
do/Start the Application

is user registered?

no

yes

Registration
do/Sign up

Log in
do/Do Log in

Waiting
do/Delete account

Waiting
do/Log out

Waiting
do/Buy credits

Edit Item
do/Edit Item

Edit Item
do/Delete the item

5 DATA MODEL AND DESCRIPTION

5.1 Data Objects

5.1.1 User:

Id: Identity number given from database for each user. This attribute is unique for every user.

Username: User`s nickname for the mobile application.

Name: Name of the user.

Surname: Surname of the user.

Password: The user`s password for logging in to the mobile application.

Email: Email of the user that will be used for the communication information and confirmation.

Phone_number: Phone number of the user that will be used for communication information.

Profile_photo: A photo that will be used for letting other users see the user.

Rating: The average number between 1 and 10 that will be given by other users after their trade transaction with the user, according to their satisfaction of the trade.

Favorites: The items that the user wants to get notification about. Basically items that user want to get.

self_items: The items that the user entered to the system to trade.

Comments: The comments written by other users who had made trade with the user.

Messages: Messages sent by other users to contact the user.

Process_history: The list of transactions and their details of the user`s that took place before i.e. items processed that the user got and the users gave.

5.1.2 Messages:

Id: Primary key given by database. This attribute is unique for every message.

Text: The information which is sent from a sender to the receiver.

Date: the date of the sent message.

Receiver_id: The user who receives the message.

Sender_id: The user who sends the message

5.1.3 Process:

Owner_id: Owner id of the item.

Item_id: The item that was processed.

Publish_date: First date that the item entered the system.

Update_dates: List of dates that the item details changed.

Trade_end_date: The date that the items got traded.

Receiver_id: Receiver id of the item.

5.1.4 Item:

Owner_id: Owner it of the item.

Description: A small description about the item that is intended to trade.

Photos: Photos of the specified item.

Category: Category of the item.

Location: Location information of the item.

Status: Status of the item. If the items' traded then it stays in database but does not appear in the list of items.

Price: Price of the item as amount of credits

Id: id of the item. It is unique for every item.

Is_tradeable: if owner of the item open to the exchange for another item.

Item_specification: item`s specific details.

5.1.5 ER Diagram of Data Model :

This E-R Diagram which is shown below this explanations explains general data design for B-xChange project. All of the information is kept in the database which can only be accessed by Server-side application. There are several relationships among entities as below:

1. First a user can add multiple items so this relationship is 1-N.

2. Add-fav relation is N-N because several items can be added to a user's t favorites and an user can add several items to their favorites.

3. User can have several comments, therefore this relation is 1-N.

4. Other relations is that a user can have several messages so this relation is also   1-N.

5. Finally a user can add several user to their favorite user list and a user can be added to several users' favorite user list so this relation is N-N like add-fav relation.
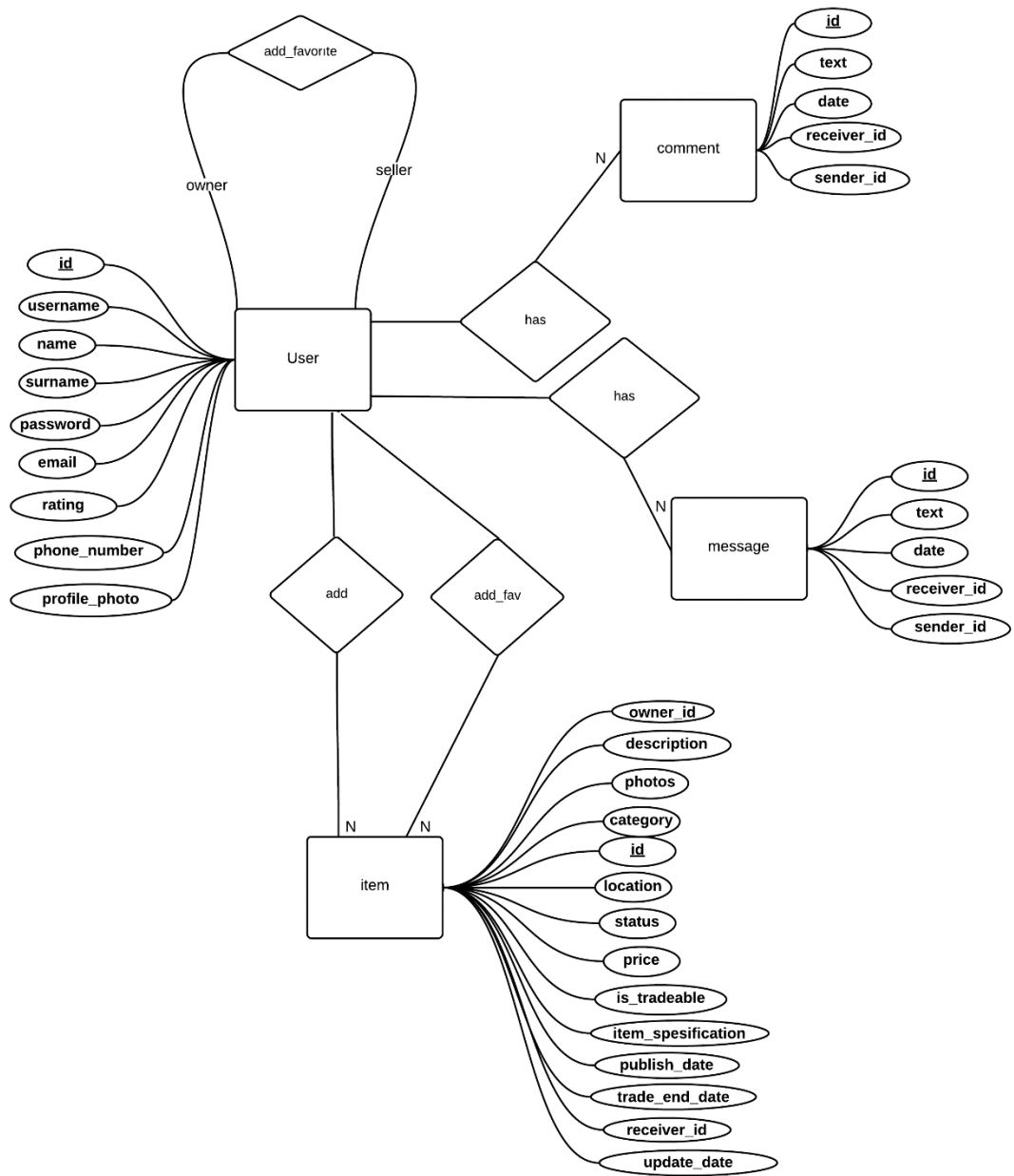
6   PLANNING

6.1 Team Structure

Our team named Epic Fail with members Anıl Doğan, Bahadır Hatunoğlu, Onur Özkan and Semih Baştak. Distribution of tasks as follows:

Name Surname	Student Id	Job	Task(s)
Anıl Doğan	1678846	Project Manager / Team Mentor	- Manage team members - Research about bottlenecks - System design - Organizing weekly work/meeting plan(s) - Code development (Server Side / Android)
Bahadır Hatunoğlu	1560259	Software Developer	- Code development (Server Side / Android) - Research - Database>Server>Phone Connection
Onur Özkan	1679505	User Interface Designer/ Developer	- Designing user interfaces - Generating user interfaces - Binding interfaces to program

			- Code development (Server Side / Android) - Research
Semih Baştak	1678796	Software Developer	- Code development (Server Side / Android) - Database generation - Research

6.2 Estimation (Basic Schedule)

Project (SRS):   30 October 2013

Project (SDD):   1 December 2013

Prototype demo: 27 January 2014

Project (STD):   Second Semester

Project (STR):   Second Semester

6.3 Process Model

We are using waterfall process model. In general, this model may be considered as having six different phases:

1. Requirements Analysis

2. Design

3. Implementation

4. Testing

5. Installation

6. Maintenance

7   CONCLUSION

In Conclusion, in this document, we have defined how should be **B-xchange** Projection detail. This is the first version plan about the project, therefore some details may update/add to newer versions of the document also some parts can be removed because of unpredictable reasons. While we are implementing the project, these add/update/remove processes will be shown in the update documents.