

Requirement Analysis Report

User Interface Group

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1 Introduction

The goal is to build a consumption credit points exchange mechanism, and exchange the points of different sellers according to users' need. It has been decided to develop first a website interface. The tools and environments for it have been decided as following:

Operating environment The website can run on computers and mobiles phones. It is compatible with the major browsers in regular desktops and laptops, including IE, Firefox, Google Chrome, Safari, QQ, Opera and so on. Also, it's workable on the browsers in the mobile devices, like UC browser.

Programming language The website will be constructed using HTML, CSS and Javascript. Most of the group members will have to learn how to code in these languages, so it will take some time. If we are quicklearners, an android application will be envisaged.

The requirement analysis done for this part of the software tries to be very logical, concise, and understandable for every reader. First, a prototype of the website has been drawn. Using this material, the website functioning can be explained and understood easily. The linking between the different pages is shown using HTML. Secondly, the logic and the architecture of the website interface has been illustrated with several UML diagrams. These diagrams are very easy to understand once the explanations about the website prototype have been made.

The prototype has been built following each group requirements. Every page has been built considering the functionalities each group needs and following a consistency guideline. Now, every group should follow the general idea put in the website structure skeleton, but the groups are welcome to suggest or request changes.

2 Prototype

The explanations here describe the logic and the purpose of each page here below. The links between them are shown via HTML that is annexed to this document.

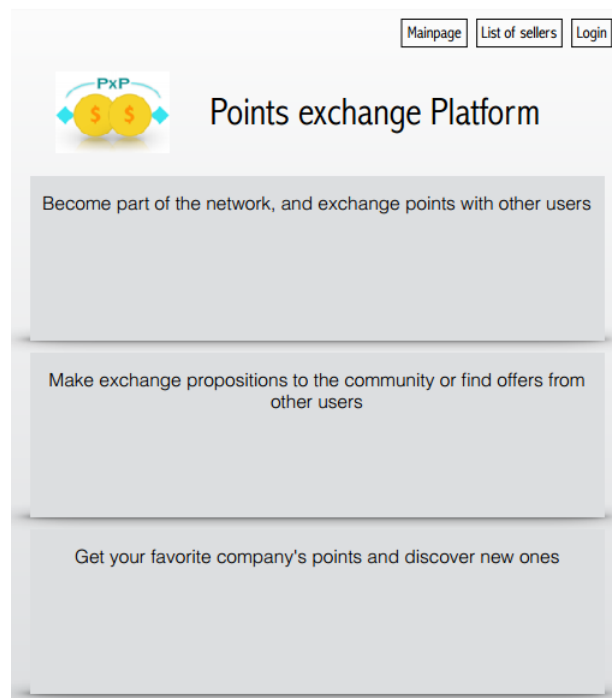



Figure 1: Welcoming page

[Mainpage](#) [List of sellers](#) [Login](#)



Points exchange Platform

Login

Client ID:

Password:


Submit

No account yet? Then sign up [here](#)
Password forgotten? Then click [here](#)

Seller's login

Figure 2: Login

[Mainpage](#) [List of sellers](#) [Login](#)



Points exchange Platform

Reinitialize your password


Enter your e-mail address:

Submit

We will send you a mail containing a link that permit you to reinitialize your password.

Figure 3: Reinitialize password form

[Mainpage](#) [List of sellers](#) [Login](#)



Points exchange Platform


Reinitialize your password

Enter a new password:

Repeat the password:

Figure 4: Reset password

[Mainpage](#) [List of sellers](#) [Login](#)



Points exchange Platform

Sign up

Name:

Gender: ☐ Male ☐ Female

Email:

Address:

Password:

Repeat password:

You already have an account? Then click [here](#)

Figure 5: Register

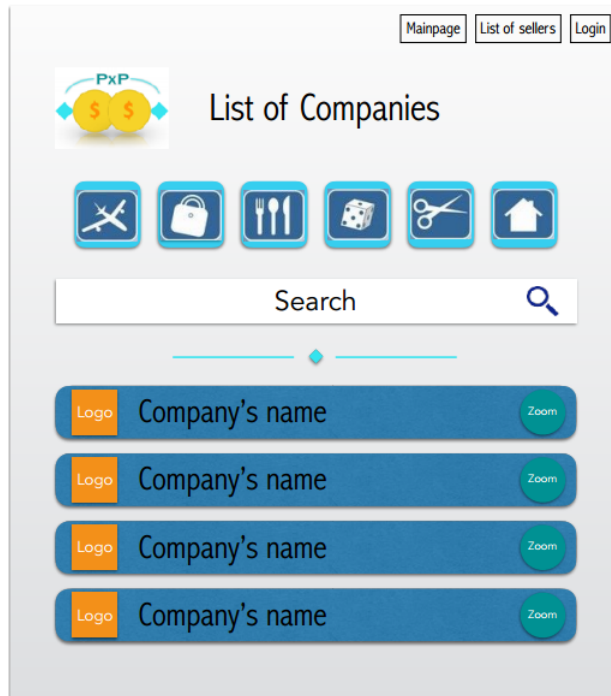


Figure 6: List of companies

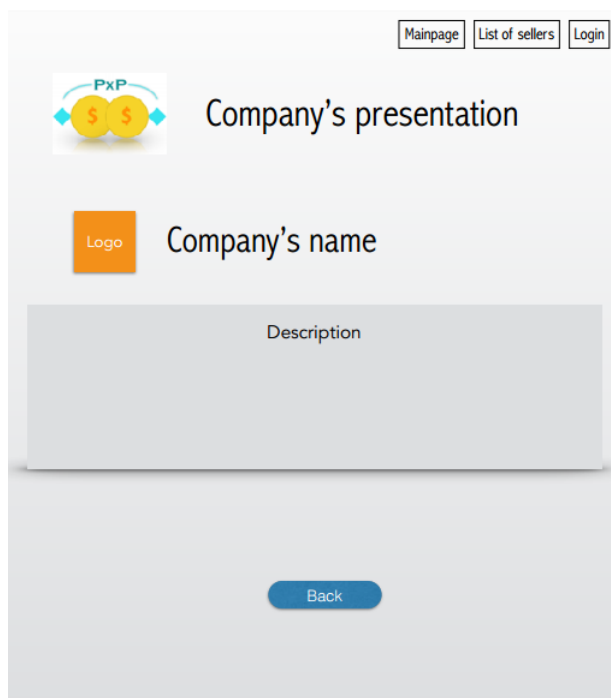


Figure 7: Company's presentation sheet

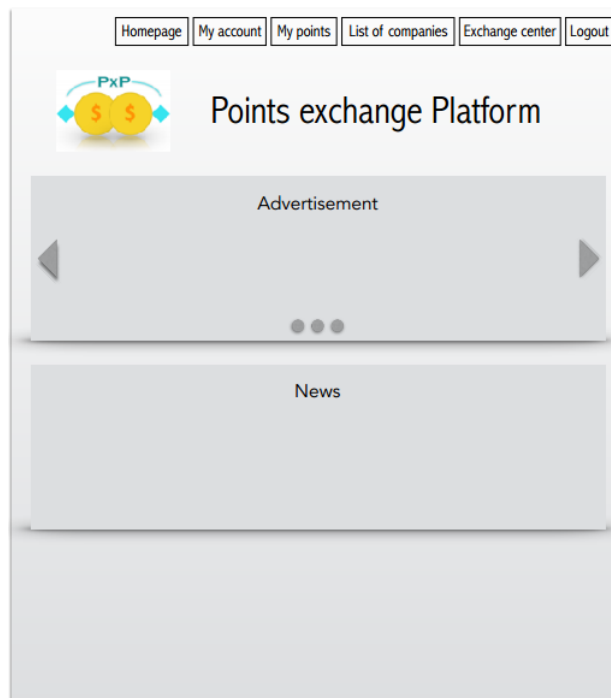


Figure 8: Homepage when logged in

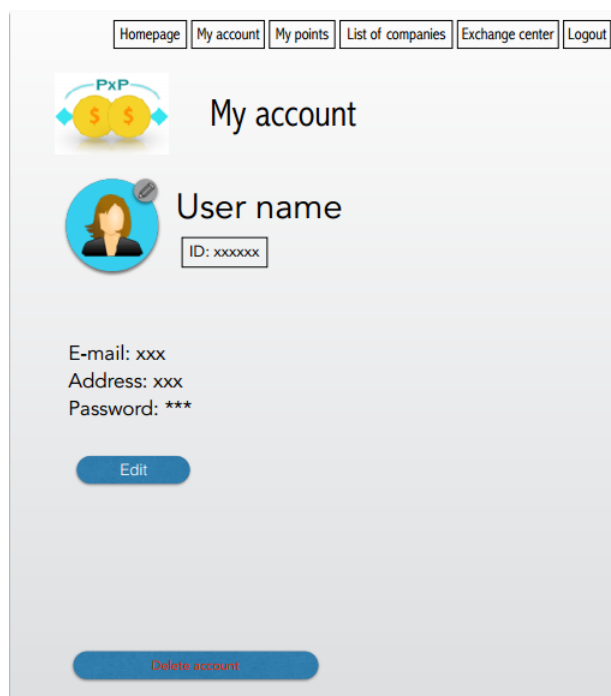




Figure 9: My account

[Homepage](#) [My account](#) [My points](#) [List of companies](#) [Exchange center](#) [Logout](#)



My account



User name

ID: xxxxxx

New e-mail:

New address:

New password:


Repeat password:

Old password:

[Submit](#)


Figure 10: Edit account informations


[Homepage](#) [My account](#) [My points](#) [List of companies](#) [Exchange center](#) [Logout](#)





My points

[+ Add membership](#)



 Company's name ♦ [Zoom](#)

 Company's name ♦ [Zoom](#)

 Company's name ♦ [Points request](#) [Zoom](#)


 Company's name ♦ [Zoom](#)

Figure 11: My points

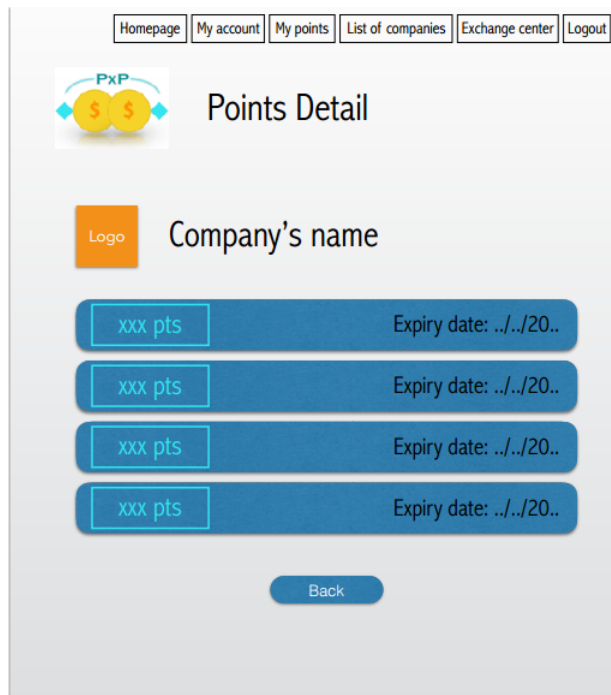


Figure 12: Points details

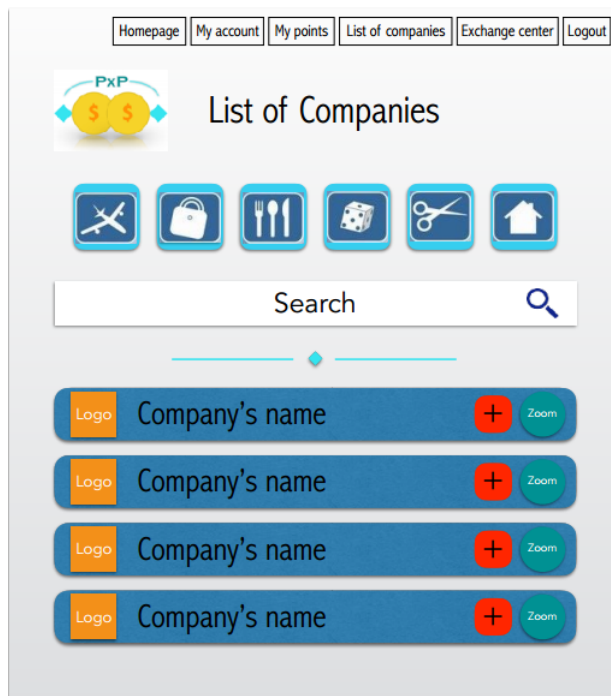


Figure 13: List of companies when logged in

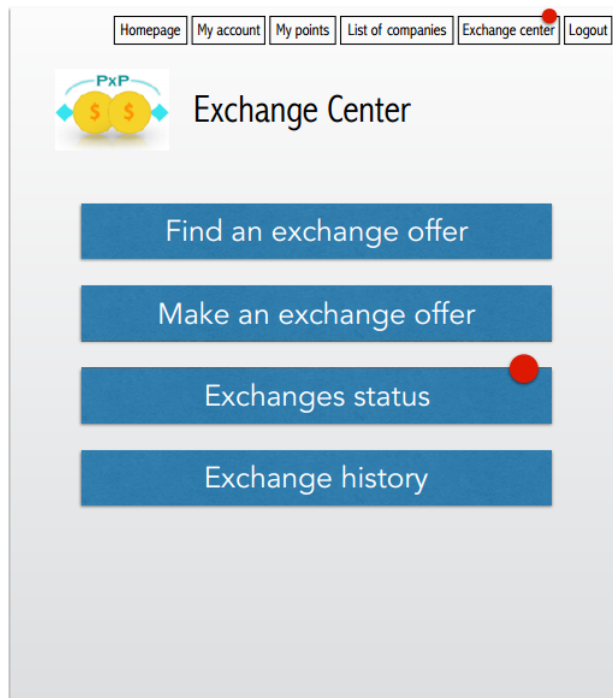


Figure 14: Exchange Center

The screenshot shows the 'Find an Exchange Offer' form. At the top, there is a navigation bar with links: 'Homepage', 'My account', 'My points', 'List of companies', 'Exchange center', and 'Logout'. Below the navigation bar is a logo with two gold coins and the text 'PxP'. The main heading is 'Find an Exchange Offer'. Below this heading is the text 'Amount of points you want to exchange:'. This is followed by a text input field, the label 'pts', and a dropdown menu labeled 'Select company'. Below this is the text 'With the nearest expiry date:' followed by a text input field and a dropdown menu labeled 'Date'. A blue diamond icon with a downward arrow is centered below these fields. Below the icon is the text 'Points of interest:'. This is followed by 'Min:' and a text input field, then 'pts' and a dropdown menu labeled 'Select company'. Below this is 'Max:' and a text input field, then 'pts'. Below this is 'Expiring after:' followed by a text input field and a dropdown menu labeled 'Date'. At the bottom is a blue button labeled 'Find'.

Figure 15: Find an exchange offer

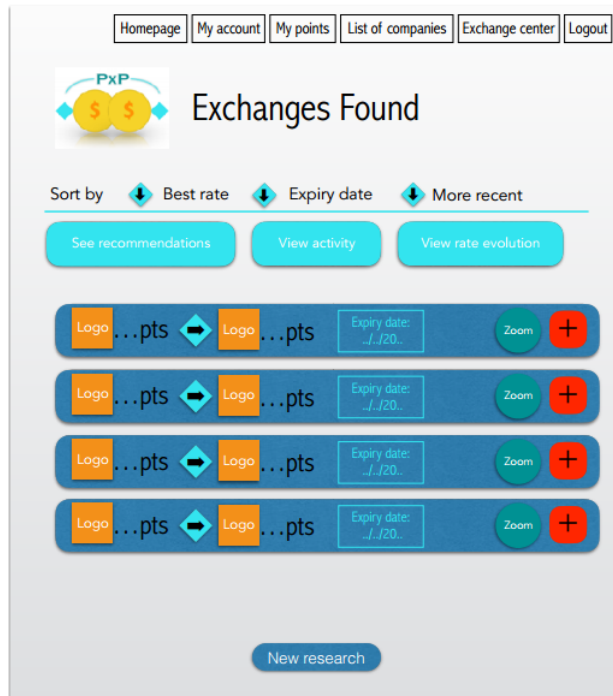


Figure 16: Exchange offers found

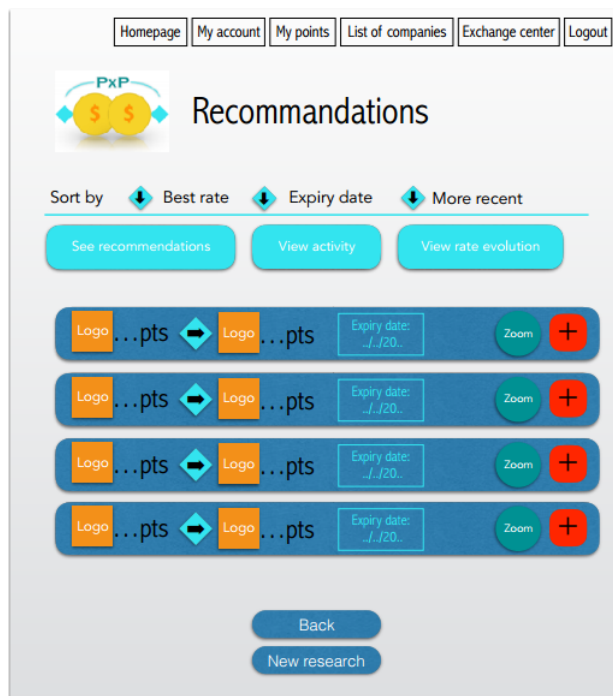


Figure 17: Recommendations



Figure 18: Recent activity

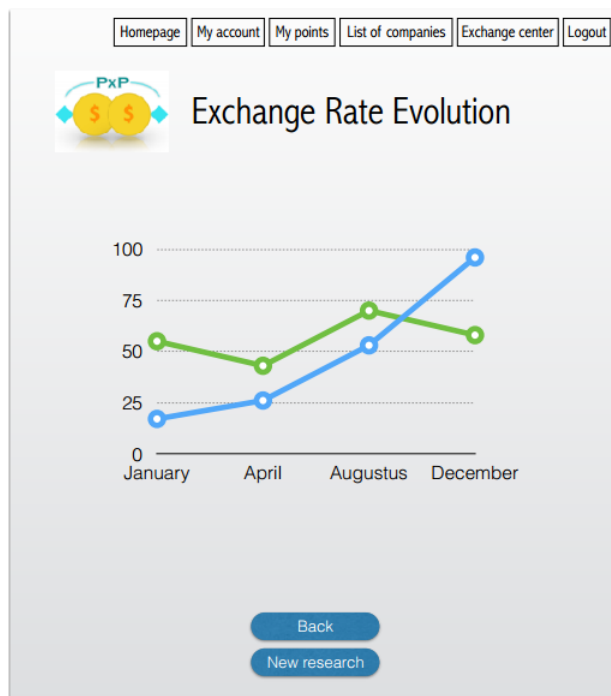



Figure 19: Exchange rate evolution

[Homepage](#)
[My account](#)
[My points](#)
[List of companies](#)
[Exchange center](#)
[Logout](#)



Make an Exchange Offer

Amount of points you want to propose:

pts

Select company

With the nearest expiry date:

Date

Amount of points you want get:

Min: pts

Select company

Max: pts

Expiring after:

Date

Offer expiry date:


Date

[Back](#)
[Submit](#)
[See average exchange rate](#)

Note that when your offer is submitted, the points you indicated to be willing to exchange will be in pending mode till another user accept your offer or till you cancel the exchange offer.

Figure 20: Make an exchange offer

[Homepage](#)
[My account](#)
[My points](#)
[List of companies](#)
[Exchange center](#)
[Logout](#)



Exchanges status

Offers submitted

Logo ...pts

Logo ...pts

Expiry date: J./J20..

Status:

Logo ...pts

Logo ...pts

Expiry date: J./J20..

Status:

Offers added

Logo ...pts

Logo ...pts

Expiry date: J./J20..

Status:

Logo ...pts

Logo ...pts


Expiry date: J./J20..

Status:

[Back](#)

Figure 21: Exchanges status

[Homepage](#) [My account](#) [My points](#) [List of companies](#) [Exchange center](#) [Logout](#)



Edit your Exchange Offer

Amount of points you want to propose:
 pts

With the nearest expiry date:

Amount of points you want get:

Min: pts

Max: pts

Expiring after:


Offer expiry date:

[Back](#) [Submit](#) [See average exchange rate](#)

Note that when your offer is submitted, the points you indicated to be willing to exchange will be in pending mode till another user accept your offer or till you cancel the exchange offer.

Figure 22: Edit an exchange offer

[Homepage](#) [My account](#) [My points](#) [List of companies](#) [Exchange center](#) [Logout](#)



Exchanges History

Logo ...pts	↔	Logo ...pts	Exchange date: ../20..
Logo ...pts	↔	Logo ...pts	Exchange date: ../20..
Logo ...pts	↔	Logo ...pts	Exchange date: ../20..
Logo ...pts	↔	Logo ...pts	Exchange date: ../20..

[Back](#)

Figure 23: Exchanges history

2.1 Welcoming page - figure (1)

The welcoming page must display a certain number of elementary informations:

1. The name and the logo of the platform
2. A general presentation about the platform
3. A short manual
4. An invitation to subscribe
5. Links to the other actions a simple visitor can do on the website

From this page it is possible for a visitor to consult the list of the companies that are part of the network and login/register.

2.2 Login page - figure (2)

The only information needed to login are the client ID and the password. If the visitor does not have an account yet, a link is available for him to subscribe. If the user has forgotten his password, a link that permit to enter the reinitializing procedure of his password is available. If the login informations are not correct, an error message (pop-up) will appear and the user will be invited to change the informations he entered.

A button for the seller's login is available and will redirect the seller to the website built by the seller's group.

2.3 Reinitialization of the password - figures (3)(4)

The user has to enter his e-mail first. Then an e-mail with a link will be sent to him. This link will enable him to choose a new password, that has to be repeated to be sure that it is the password he desired.

2.4 Register page - figure (5)

Some informations are required from the user that will be needed to login and some of them are not essential, but will constitute an interesting database for the seller.

2.5 List of Companies (visitor view) - figure (6)

This page permits the user to go through the companies' repertory. The companies are classified by alphabetical order. He can click on the different categories buttons that will display only the companies corresponding to the selected category. A research module is also available.

The classification system presented here is very basic for now. It can be ameliorated by different ways, by the addition of research options for example.

The zoom button direct the user to the company's page.

2.6 Company's sheet - figure (7)

Each company has a page where it can present itself, display advertisements, etc.

2.7 Homepage - figure (8)

After the login, the user arrives at the homepage. This page contains different displaying areas for news, advertisements, etc. Different buttons on the top of the page are shortcuts links to the main pages available for the user. These buttons are permanents and will appear on every page of the website.

2.8 My account - figure (9)

On this page, the user can view all the informations defining him. A button will permit to edit his informations. Another one can delete the account if the user is not interested anymore.

2.9 Edit my informations - figure (10)

The user can fill the areas corresponding to the informations he desires to correct.

2.10 My points - figure (11)

The different companies where the user has membership in are displayed. When the user adds a membership, he has to ask the company how many points he has in its database (the *Points request* button). Then the points will be displayed. The value is actualized every 10 minutes (for example) or everytime a procedure affecting the company's points takes place.

The zoom button permits to display the details concerning the points the user has in the company.

The research module is useful for users having a lot of memberships.

If the user wants to add a membership, he can click on the red + button. He will then arrive at the list of companies where he can find the company he wants.

2.11 Points Details - figure (12)

The points that a user has in a company could be acquired at different moments. Thus, the points could have different expiry dates. It is interesting for the user to consult these dates. The points that expire soon (1 month for example) will be displayed in red.

2.12 List of Companies (user view) - figure (13)

This page is the same as the one explained at the section 2.5. The new option available for the logged in users is the *Add Membership* button (the red +).

2.13 Exchange Center - figure (14)

The Exchange Center will allow the user to access all the fonctionnalités concerning points exchanges:

1. Find an exchange offer: the user can browse the exchanges available on the network.
2. Make an exchange offer: the user can post an offer he will parameterize himself on the network.
3. View the exchanges status: the user can monitor the offers he retained or made. If one of the exchanges changed of status recently, the user will be notified by a red spot as it can be seen on the prototype.
4. Exchanges history: the user can review all the exchanges he made in the past.

2.14 Find an Exchange Offer - figure (15)

To find an exchange offer, the user has to precise the type (the company and the nearest expiry date that suits him) and the amount of points he wants to exchange from his wallet first. Then he has to precise the targeted company and a range of point he estimates in which the exchange will be fair. Then the form is submitted and the results of the research come out on another page.

2.15 Exchanges Found - figure (16), Recommendations - figure (17), Activity - figure (18) and Rate Evolution - figure (19)

The results from the research are ordered following the best exchange rate criterium by default. Other classifications are available: following the expiry date or the date of posting. The expiry date is the one of the first expiring points in the lot. The user can see the details of the points lot when he clicks on *Zoom*.

The *add* button will make the offer appear in the *Exchanges Status* section, where the user can manage the exchanges he is interested in.

The *See Recommendations* button will make appear a page proposing the top 5 exchanges offers, which are a compromise between the exchange rate and the expiry date.

The *View Activity* button will make appear a page where the recent exchanges that took place between the two selected companies are displayed.

The *Rate Evolution* button will make appear a page where the evolution of the exchange rate is shown in a graph.

2.16 Make an Offer - figure 20

If the user cannot find an offer corresponding to its taste, he can make an offer following the same scheme as in the one in the *Find an Exchange Offer* page. It must be precised that in the *Find an Exchange Offer* form, the origin company selection is made in the list of the compagnies in which the user has membership. Here, a condition is added: the companies are the ones in which the user has membership AND has requested his points.

To select the expiry date for the origin points, a list of dates corresponding to the expiry dates of each lot of points in the user's possession is shown.

A button *See average exchange rate* makes a pop-up appear, informing the user about the value of the absolute average exchange rate (the averaging is done on all the exchanges between the two concerned companies recorded ever).

2.17 Exchanges Status - figure 21

This page is divided in two sections: the status of the offers the user has submitted on the network and the offers he found and added in his "Exchanges wallet". The user can delete the offers he is not interested in anymore or doesn't desire to maintain. For the offers he submitted, the expiry date displayed is the date where the offer will disappear if nobody is interested in it. For the offers found, the expiry date is the expiry date of the points involved in the bargain. The user can also modify one of his exchange propositions by clicking on the button edit. The offers expiring soon will be displayed in red, and the newest offers are displayed in yellow.

A red spot indicates a change of status since the last viewing of the page.

The status will be defined by the platform group and the block chain group, according to their management of the exchanges and the business rules they decided. More functionalities will appear when they settle this rules right.

2.18 Edit your Exchange Offer - figure 22

All the parameters that define the exchange proposition can be modified, except the origin company. For that, the user will have to make a new echange offer.

2.19 Exchanges history - figure 23

This page displays all the exchanges the user has done in the past on the platform.

3 Functional Requirements

3.1 Functional diagram

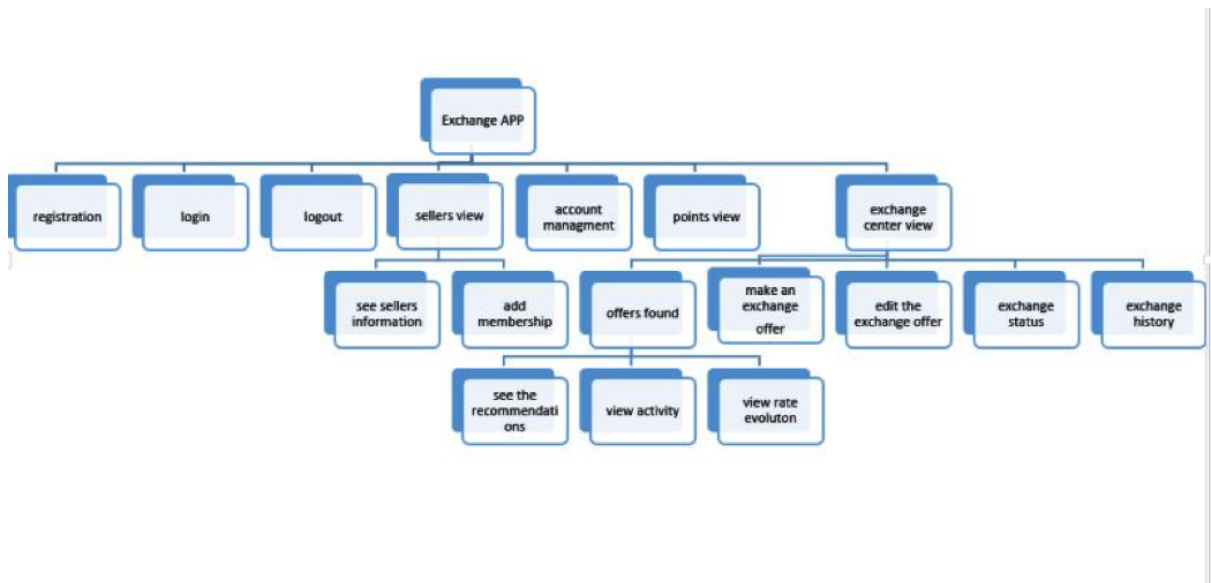


Figure 24: Functional diagram

3.2 Function Division and Description

1. Registration
 - (a) Fill in the information, such as username, password and so on
 - (b) Submit personal information
2. Login
 - (a) Write username and password, then enter the system
 - (b) Find back your password, and reinitialize the password
3. Account Management
 - (a) View personal information
 - (b) Edit personal information
 - (c) After editing, click “submit” button, “modification successful!” appears, and back to the account page
4. Points View
 - (a) Search the names of companies, and query points
 - (b) Click “zoom” button, view company’s detailed information, including expiry date
5. Seller’s View
 - (a) Search companies, sort by categories
 - (b) Click “zoom” button, view company’s detailed informations
 - (c) User must add membership before exchanging, and click “add” button to be membership of the company

- (d) Visitors can only view the companies' informations, and cannot be membership before having an account
- 6. Enter Exchange Center
 - (a) Find an Offer
 - i. Fill the blank of the related page, and click "find" button to search
 - ii. Offers can be displayed using different ranking systems
 - iii. View recommendations, activity, and rate evolution
 - (b) Make an Offer
 - i. Fill the areas on the page, and click "submit" button
 - ii. View the exchange rate
 - iii. After submitting, wait for other users' response
 - (c) View Exchange Status
 - i. If someone wants to exchange points with you, the offer will have a red spot
 - ii. If the offer will expire soon, the background becomes red
 - iii. Offers add recently will be yellow background
 - iv. Click "back" button return to the exchange center
 - (d) Click "back" button return to the exchange center

4 Use Cases Diagram

The following diagram is rather clear and does not need further explanations. We can just emphasize the fact that the seller is not considered in this work. The ultimate goal is to create an application that will be used only by the users. The seller will be using the website intended for him. In the prototype though, a link to the seller website had to be added. The rest is supported by the seller's function group.

5 Business Process Diagram

The following diagram is a representation of the logic of the platform. This decision tree-like diagram explains how the visitor will jump from a page to another, under certain conditions. The color code helps to the logic comprehension and represents the different accessible layers of the website.

Explanations about the details of the diagram are not necessary if the prototype has been understood.

6 Conclusion

The website prototype created here will constitute the rough material for the next development phases. The interface can change a lot. Every modification or change of mind made by one of the groups has a high probability of having a visible impact in the interface. The interface group will thus have to constantly work with the other groups.

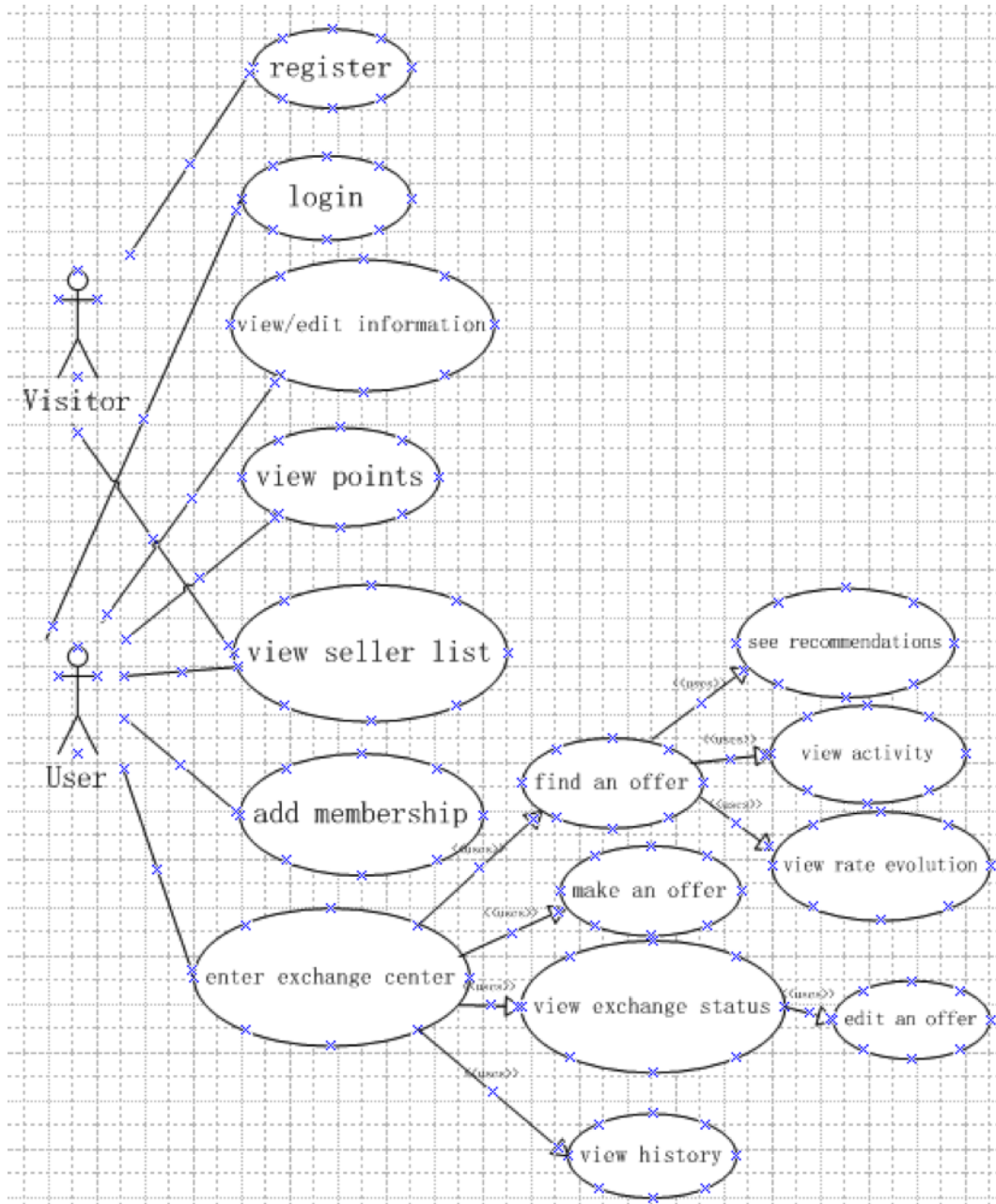


Figure 25: Use cases diagram

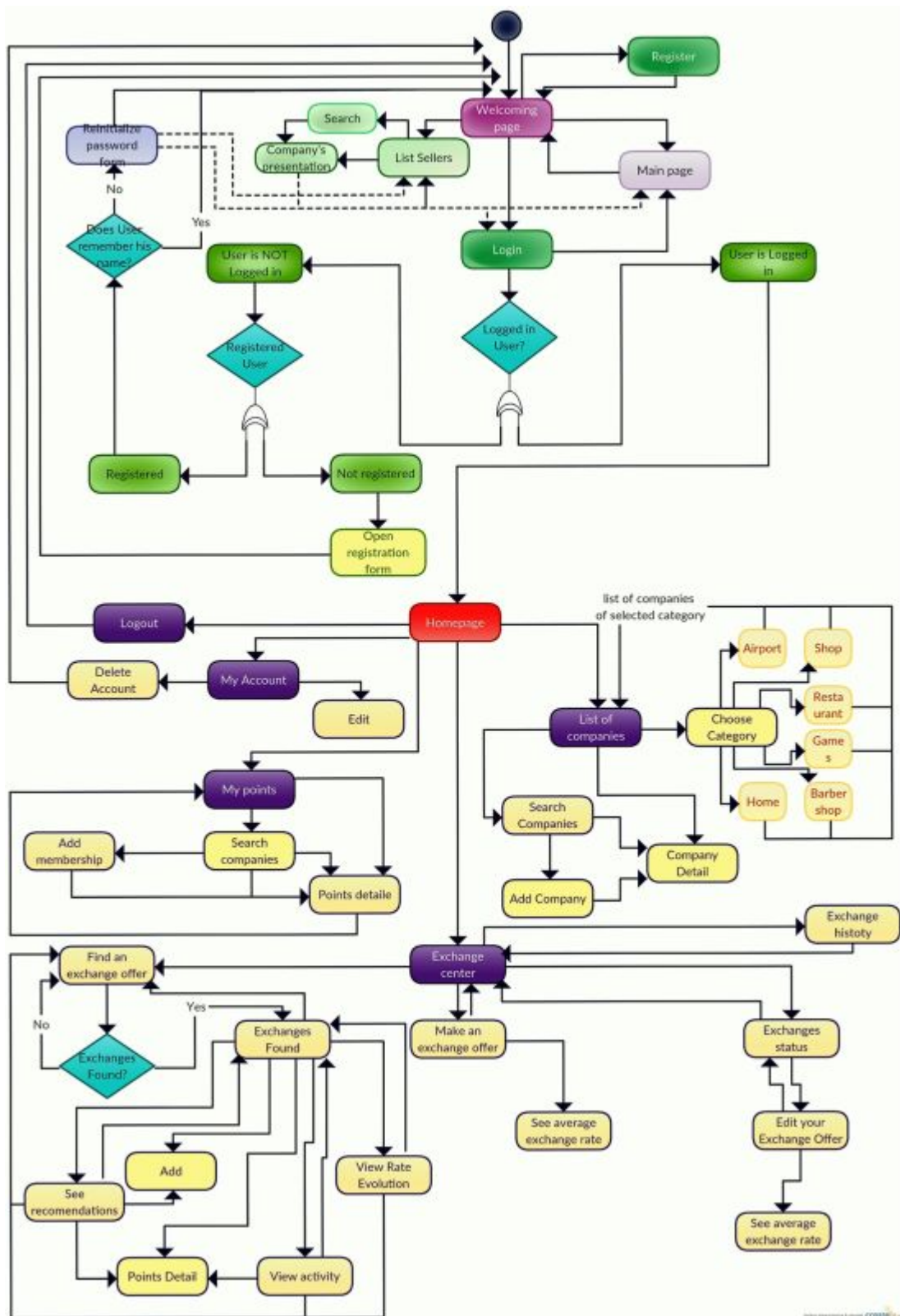


Figure 26: Business Process Diagram