

DESIGN AND IMPLEMENTATION OF A PLATFORM (WEBSITE) FOR PROFESSIONAL'S SERVICES

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Dedicated to the loving memory of my uncel Ameer Mohamed.
professor at Setif University and inspector dean in the Algerian customs, martyr of
national duty. may Allah be merciful to him 1970 – 2016

*We have seen that computer programming is an art,
because it applies accumulated knowledge to the world,
because it requires skill and ingenuity, and especially
because it produces objects of beauty.*

— Donald E. Knuth

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In The Name of ALLAH, The Most Beneficent, The Most Merciful.

All praise belongs to ALLAH alone, and blessings and peace be upon the final Prophet.

At first a many thanks to my parents whos never stopped trying to encourage me,Thanks to all my family members for theirs encouragements .

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LISTINGS

ACRONYMS

DRY Don't Repeat Yourself

API Application Programming Interface

UML Unified Modeling Language

Part I

GENERAL INTRODUCTION

GENERAL INTRODUCTION

One of the specificities of human being that he is a social creature, since the beginning of his existence on earth; he was learning a lot of aptitudes and competences from his relationships with other humans.

Social interactions between individuals of social networks requires many tools of communication that was developed as and when the apparition of new technologies of groupware, that we call in our days social networks.

Therefore, social networking has existed since men are grouped together in a society, and in social groups.

Most of the social networks that currently exist are web sites, mobileâs application, that provide several services for the users like the instants messages (Chat), and share files, and the web 2.0 because the emergence of web 2.0 is related to the revolutions technological and technical aspects. The advent of AJAX (JavaScript + XML) technology enabled faster interactions with web pages. The biggest problem for social networks is how to assemble as many people as possible in a social network. At the same time, it is the major objective of these networks.

The social networks that currently exist solve the problem, but the number of users of each social network is different in view of the diversity of services they provide.

Our project is to design and implement a community-based professional social network to meet the needs of the handicraft, workers, and their clients to facilitate exchanges, communication and information sharing and Knowledge.

Through its functionalities, the main objective of our work is to encourage communication, sharing and exchange of knowledge between workers, in addition, our platform try to find a solution for workers that have a lack of experience to have professional relations, and to marketing themselves professionally to find suitable work place.

We made this modest platform after we have noticed lack of such services in our region.

To complete our objectives we have divided this thesis into three chapters:

- **Chapter 01** : social interaction history and definition
 - The objective of this chapter is to present the different theoretical concepts related to social networks and tools of communication and collaboration, starting with giving the types of social networks, then we focused on the social networks we talk about in this theses, the **professional social network**.
- **Chapter 02** : Analyse & Design "FindHandicraft"
 - The objective of this chapter is to present the general architecture and design of our system, starting with a general description of its components and detailing its features until it ends with the modeling of these features.
- **Chapter 03** : system implementation "FindHandicraft"
 - Finally, we will present in the third chapter the implementation of the different components of our **platform** by talking about the different tools used to realize this platform.

To close this work, this work will end with a general conclusion summarizing the contribution of our work with possible perspectives.

Part II

SOCIAL INTERACTION

“Through our evolution, we’re so specialized for social interaction. So, if you can really design robots that can interact with people, in this very natural, interpersonal way, I think that would be great. You wouldn’t have to have people read manuals, in order to operate them.”

— Cynthia Breazeal

SOCIAL INTERACTION

2.1 INTRODUCTION

“Social media is something of a double-edged sword. At its best, social media offers unprecedented opportunities for marginalized people to speak and bring much needed attention to the issues they face. At its worst, social media also offers ‘everyone’ an unprecedented opportunity to share in collective outrage without reflection.”

— Roxane Gay

We will try in this chapter to make an introduction on the principles of social networks through the base of each social network “social interactions”, to the current social networks.

2.2 SOCIAL INTERACTION

The study of social interaction involves the careful assessment of the practices of everyday communicating between people in various real-life contexts, such as doctor-patient relationships, organizations, and human-computer communication.

Individuals in a society make a social system the social relationships between them reinforce their existence together it starts from a relation between two people then it includes all the society.

“Social-interaction is the general process whereby two or more persons are in a meaningful contact, as a result of which their behavior is modified however slightly.”

— Merrill

“Social interaction is such a process which influences the overt behavior or state of mind of the individuals.”

— Corkiness

2.3 COMMUNITY

A community is a small or large social unit (a group of living things) who have something in common, such as norms, religion, values, or identity. Communities often share a sense of place that is situated in a given geographical area (e.g. a country, village, town, or neighborhood) or in virtual space through communication platforms [4].

2.3.1 *Virtual community*

A virtual community is a social network of individuals who interact through specific social media, potentially crossing geographical and political boundaries in order to pursue mutual interests or goals. Some of the most pervasive virtual communities are online communities operating under social networking services [4].

2.4 GROUPWARE

Collaborative software or groupware is application software designed to help people involved in a common task to achieve their goals [15].

“Groupware is the set of technologies and associated working methods which, through electronic communication, allow the sharing of information on a digital medium to a group engaged in collaborative and / or cooperative work”

— Jean-claude Courbon

2.5 COLLABORATION PLATFORM

A collaboration platform is a category of business software that adds broad social networking capabilities to work processes. The goal of a collaboration software application is to foster innovation by incorporating knowledge management into business processes so employees can share information and solve business problems more efficiently [1].

2.5.1 *Types of collaborative platforms*

There are several types of platforms that allow the exchange and sharing of information. Most of the time they are messaging tools (instant or not), various applications... The

following figure is a matrix, made by [Johansen, 1988],¹

Divided along the time and space axes, to represent the different types of collaborative platforms.

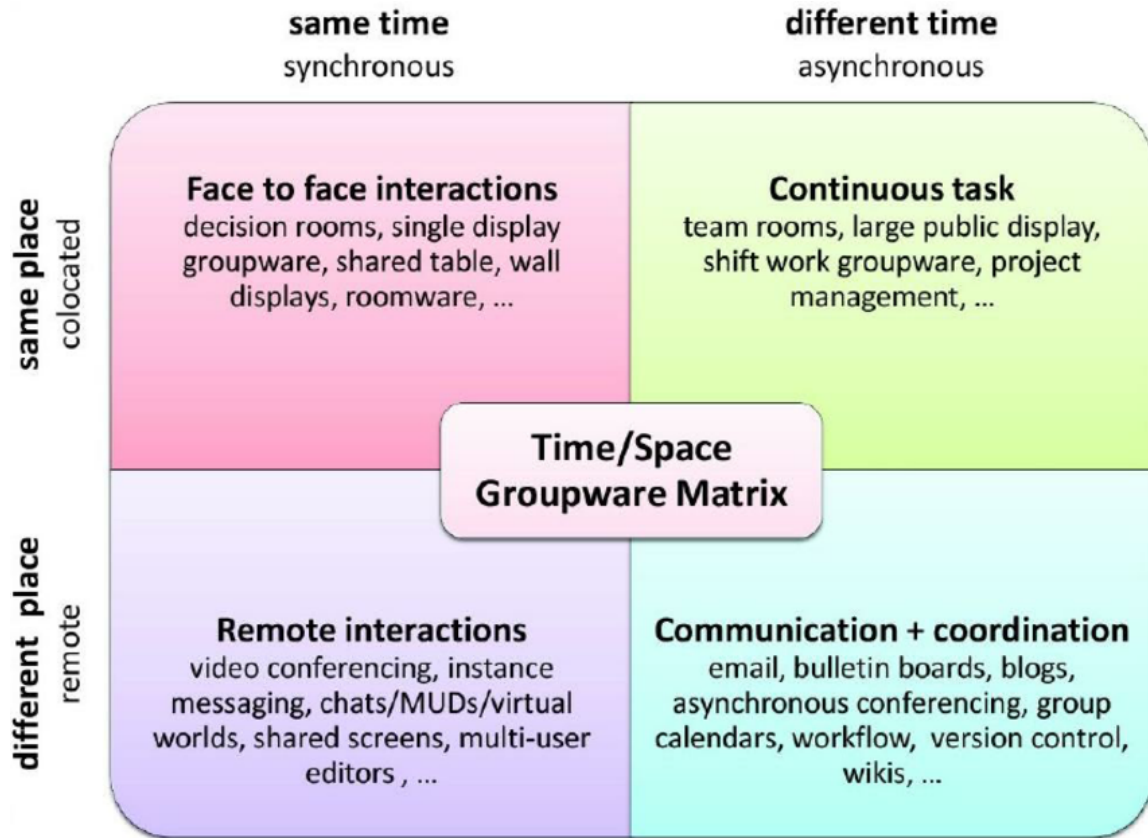


Figure 1: Matrix (Johansen, 1988).

Our project focuses on groupware used at different times by people from different places.

2.5.2 Uses of collaborative tools

2.5.2.1 Blogs

A website, similar to an online journal that includes chronological entries made by individuals. The word blog was derived from the combination of the word web and log. Blogs typically focus on a specific subject (Economy, entertainment news, etc.) and provide users with forums (or a comment area) to talk about each posting. Many people use blogs as they would a personal journal or diary [3] .

2.5.2.2 Wikis

A type of collaboration website that allows users to upload, edit, and remove content present on a webpage. The goal of these sites is to form a comprehensive meaning, definition, or answer on a specific subject matter. Some popular wiki websites are Wikipedia and WikiAnswers [5].

2.5.2.3 Social Network

Social network (in Sociology) is a sociological concept for a set of social relations between network elements that interact and that are especially individuals.

Referred to as a virtual community or profile site, a social network is a website that brings people together to talk, share ideas and interests, or make new friends. This type of collaboration and sharing is known as social media. Unlike traditional media that is typically created by no more than ten people, social media sites contain content created by hundreds or even millions of different people [10].

“Social network is formally defined as a set of social actors, or nodes, members that are connected by one or more types of relations. Nodes, or network members, are the units that are connected by the relations whose patterns researchers study .”

— Was & Fau 94

Views social relationships in terms of network theory consisting of nodes and links 2 .

- Node: actor on which relationships act.
- Link: relationship connecting nodes.

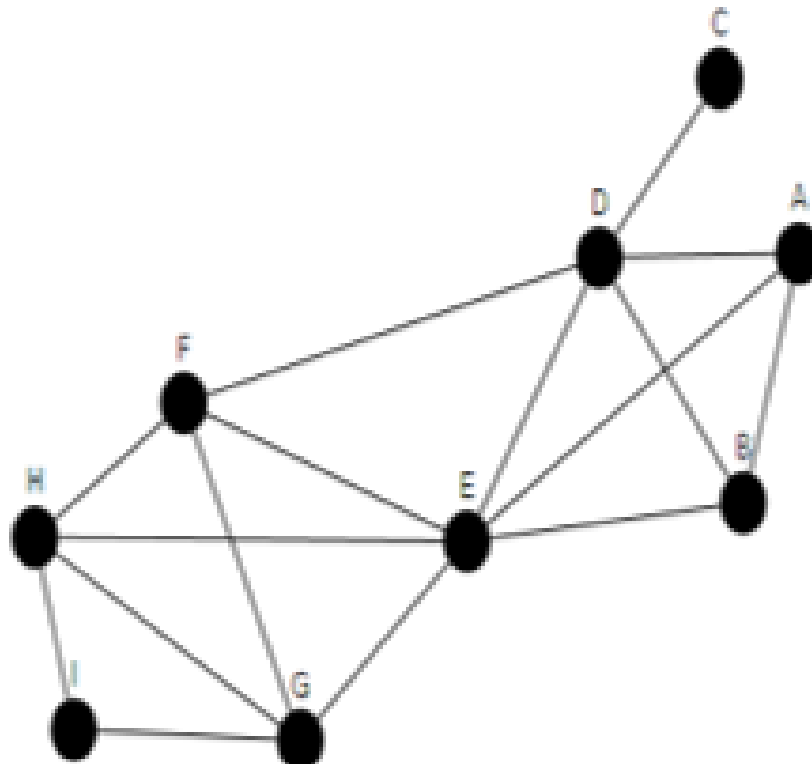


Figure 2: Social network graph.

Technological, the network defines a set of interconnected devices that serve to convey a flow of information, there are several networks, the most important of which is global network: Internet, which is of interest to us in this case.

The main features that distinguish social networks on the Internet from the social networks extracted based on interactions between people in the real world are as follows.

- Lack of physical, in person contact â only by distance, sometimes very large distances.
- Usually the lack of unambiguous and reliable correlation between memberâs identity in the virtual community â internet identity and their identity in the real world.
- The possibility of multimodal communication, simultaneously with many members; also the possibility of easy switches between different communication channels, especially online and offline, e.g. online VoIP and offline text communication.
- The simplicity of a break up and suspension of contacts or relationships.

1. History

Social networking was born one day in 1971, when the first email was sent. The two computers were sitting right next to each other. The message said “qwertyuiop”.

In 1978, the BBS or Bulletin Board System, was created. The BBS hosted on personal computers, where users need to dial in via the modem of a host computer, and exchanging data through phone lines to other users. The BBS was the first system that lets users interact with one another through the internet. It was slow, but it was a good start, and only one user could log in at a time.

Later that year, the very first web browsers were distributed using Usenet, the earliest online bulletin board of the time. Usenet was created by Jim Ellis & Tom Truscott, where users posted news, articles and funny posts. Unlike the BBS and forums, Usenet did not have a “central server”. This concept soon inspired the “Groups” feature we know today; such as Yahoo! Groups, Google Groups and Facebook Groups. The first ever version of instant messaging was around 1988, called IRC or Internet Relay Chat. IRC was Unix-based then, and thus exclusive only to a few people. IRC was used for communications, as well as link and file sharing. Soon the earliest copies of web browsers were distributed via Usenet.

In 1994, the first social networking site was created, Geocities. Geocities allowed the users to create and customize their own web sites, grouping them into different “cities” based on the site’s content. The following year, [TheGlobe.com](#) launched to public, giving users the ability to interact with people who have the same hobbies and interests, and to publish their own content.

A few years later, AOL Instant Messenger and SixDegrees.com launched in 1997. Instant messaging was born, giving users the freedom to chat with friends, and create a profile. AOL was probably the true precursor to today’s social networking sites. The member profiles allowed its users to write a biography and share details about themselves. The profiles were searchable so people could look your profile up. It was the most innovative feature at that time.

Other sites followed suit, creating social networking sites such as Classmates, Friendzy, Hi-5, just to name a few. Many were dating sites, while some were more niche driven. For example, Classmates allowed users to reconnect with old classmates, pals, bullies and crushes. It was a hit immediately, and today Classmates still has some 40,000,000 registered users.

Other niche-driven sites are AsianAvenue established in 1997. By 1999, BlackPlanet was established and in 2000, [MiGente.com](#) for Hispanic servers. In the mid-1990s, the internet was at its full force. Yahoo! was established and Amazon had begun

selling books. Every household was getting a PC. The World Wide Web showed no signs of slowing down.

The first modern social networking site that we define today is Friendster. It also uses the degree of separation concept similar to SixDegrees, but dubbed it “Circle of Friends”. Friendster was basically a dating site that wasn’t all about dating. In the first 3 months, Friendster was able to amass 3,000,000 users. This means 1 in 126 web users were Friendster members at the time.

Soon MySpace followed suit, who cloned Friendster. It was launched after only 10 days of coding. It soon became more popular than Friendster. MySpace gave users more freedom than Friendster when it came to customization; with music, videos and a hipper online environment. It garnered 90 million registered users.

Another site with considerable success is LinkedIn. It was established in 2003, and took a more professional and business approach to social networking. Other sites focused on getting dates, having friends, and reuniting with old classmates, but LinkedIn focused on building business contacts and professionals. Today LinkedIn has 30 million registered members.

Facebook came into the social networking scene a little bit later. It was launched in 2004, and the primary intent was to connect US college students. Facebook first began with Mark Zuckerberg’s alma mater Harvard. At first it was exclusive, and you could only join in if you had been invited by a member of Facebook. The “exclusive” feature proved to be a success, and in its first month, over half of the 19,500 Harvard students signed up. Two years later, the campus-only networking site became open to the public. In 2008, Facebook surpassed MySpace and Friendster as the leading social networking site. It now has over 150 million members around the globe. [16] [11]

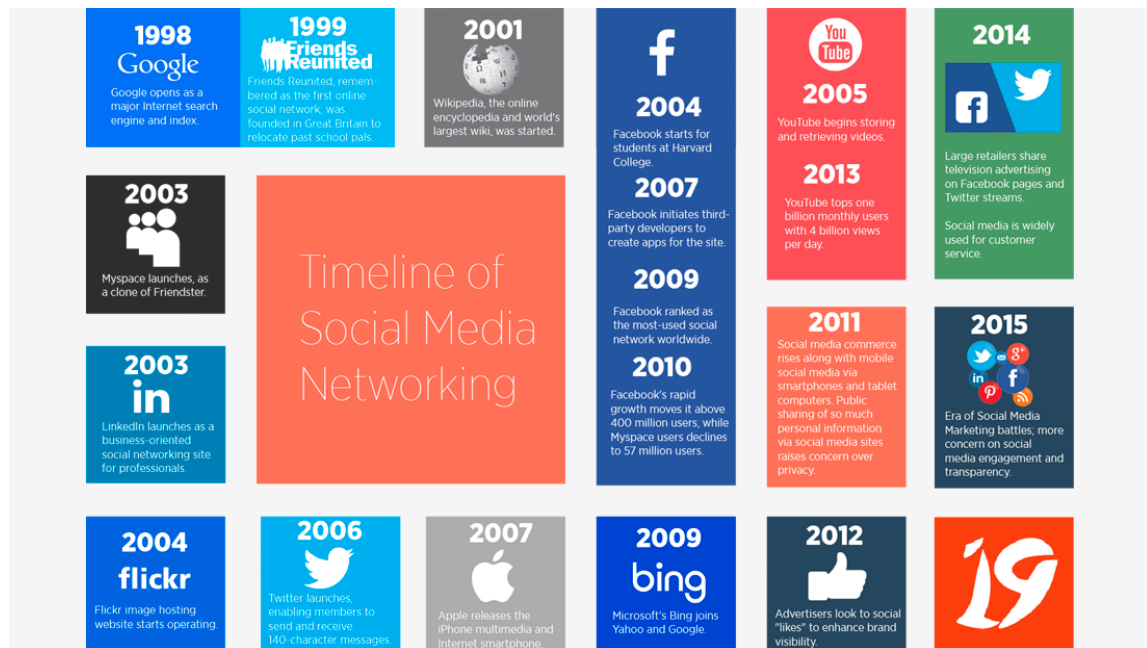


Figure 3: Social media timeline.

2. Typologies of social networks

Social networks can be classified according to different typologies.[19]

a) Social Connections

Sometimes called “relationship networks,” help people and organizations connect online to share information and ideas.

Now, and especially since the rise of the mobile internet, these networks have become hubs that transform nearly every aspect of modern life, from reading news to sharing vacation photos to finding a new job, into a social experience. Example: Facebook, Twitter, Google +, MySpace

b) Multimedia Sharing

Media sharing networks give people and brands a place to find and share media online, including photos, video, and live video.

Example: YouTube, Flickr, Instagram, Snapchat

c) Informational

Informational communities are made up of people seeking answers to everyday problems. For example, when you are thinking about starting a home improvement project or want to learn how to go green at home, you may perform a web search and discover countless blogs, websites, and forums filled with people who are looking for the same kind of information.

Example: Super Green Me, Do-It-Yourself Community

d) Educational

Educational networks are where many students go in order to collaborate with other students on academic projects, to conduct research for school, or to interact with professors and teachers via blogs and classroom forums.

Example: The Student Room, The Math Forum, ePALS School Blog

e) Hobbies

Use to conduct research on favorite projects or topics of interest related to personal hobbies. When people find a website based on their favorite hobby, they discover a whole community of people from around the world who share the same passion for those interests. Social networks that are focused on hobbies are the most popular . Example: Oh My Bloom, My Place at Scrapbook.com

f) Academic

Academic researchers who want to share their research and review results achieved by colleagues may find academic-specific social networking to be quite valuable.

Example: Academia.edu, Connotea Collaborative Research

g) Professional

Professional social networks are designed to provide opportunities for career-related growth. Some of these types of networks provide a general forum for professionals to connect, while others are focused on specific occupations or interests.

A professional network service is used by business individuals to establish and maintain professional contacts and a way to either find work or get ahead in career as well as gain resources and opportunities for networking. According to LinkedIn managing director Clifford Rosenberg in an interview by AAP in 2010, "this is really a call to action for professionals to re-address their use of social networks and begin to reap as many rewards from networking professionally as they do personally." Businesses mostly depend on resources and information outside company and in order to get what they need, they need to reach out and professionally network to others, such as employees or clients as well as potential opportunities [18] .

"Nardi, Whittaker and Schwarz (2002) point at three main tasks that they believe networkers need to attend in order to keep a successful professional

(intentional) network: building a network, maintaining the network and activating selected contacts. They stress that networkers need to continue to add new contacts to their network in order to access as many resources as possible, and to maintain their network through staying in touch with their contacts. This is so that the contacts are easy to activate when the networker has work that needs to be done [14]."

Example: LinkedIn, Classroom 2.0, AngelList, Beyond

3. The economic value of a social network

Accounts of thriving urban economies, both popular and scholarly, assert the importance of social capital and social networks. Meanwhile, sociologists have more explicitly explored the links between social networks and economic performance. Research suggests that firms that are better connected in social networks perform better across a range of performance measures. [12]

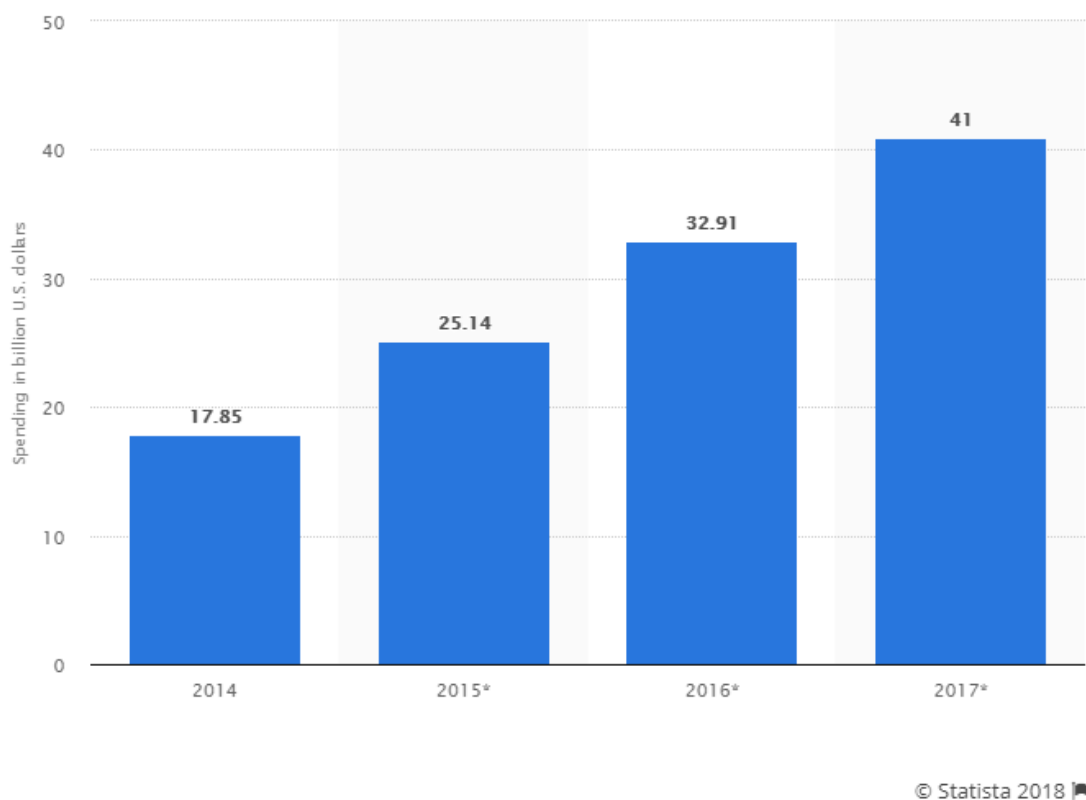


Figure 4: Social network advertising revenue from 2014 to 2017 (in billion U.S. dollars).

This statistic 4 provides data on the global advertising revenue of social networks in 2014 as well as a forecast thereof until 2017. The source estimated that in 2017, the revenue would amount to 41 billion U.S. dollars, up from 17.85 billion in 2014.

A different source estimated that mobile social ad spend would amount to 23.39 billion U.S. dollars worldwide in 2017, where desktop social to 8.63 billion. According to a 2016 estimate, Facebook and Twitter together hold nearly three quarter of the social media ad market. [2]

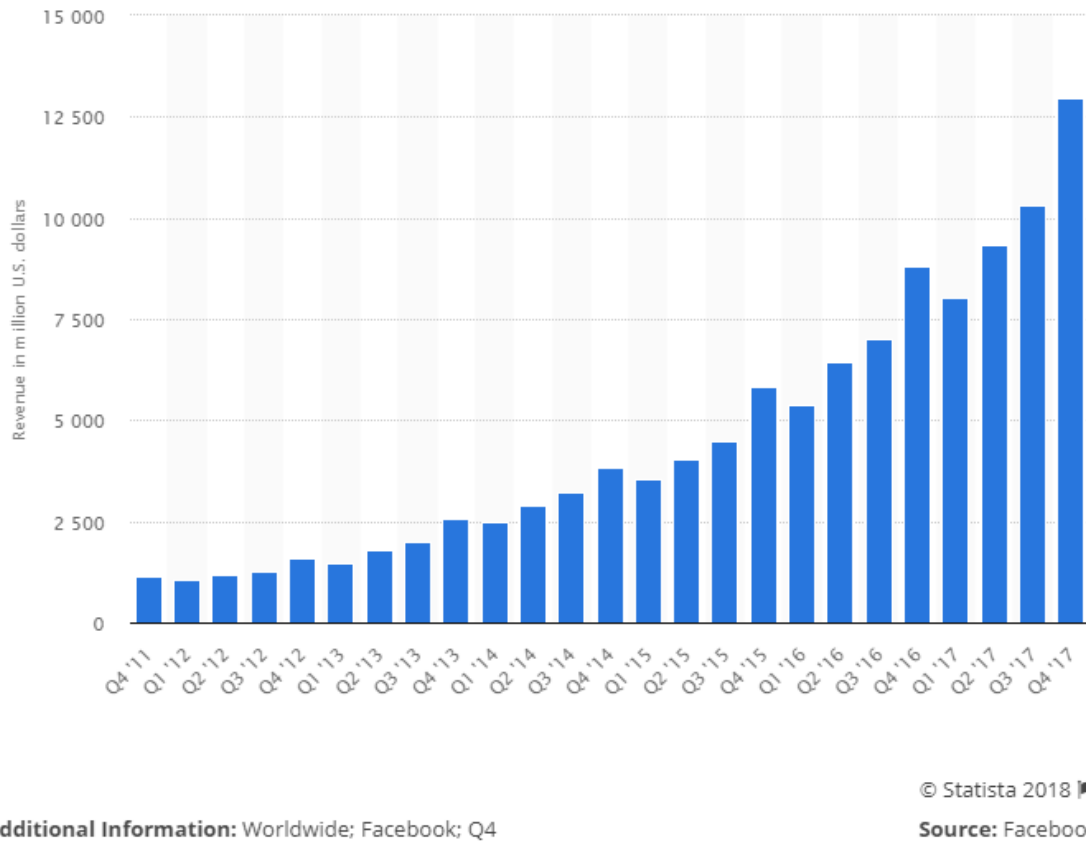
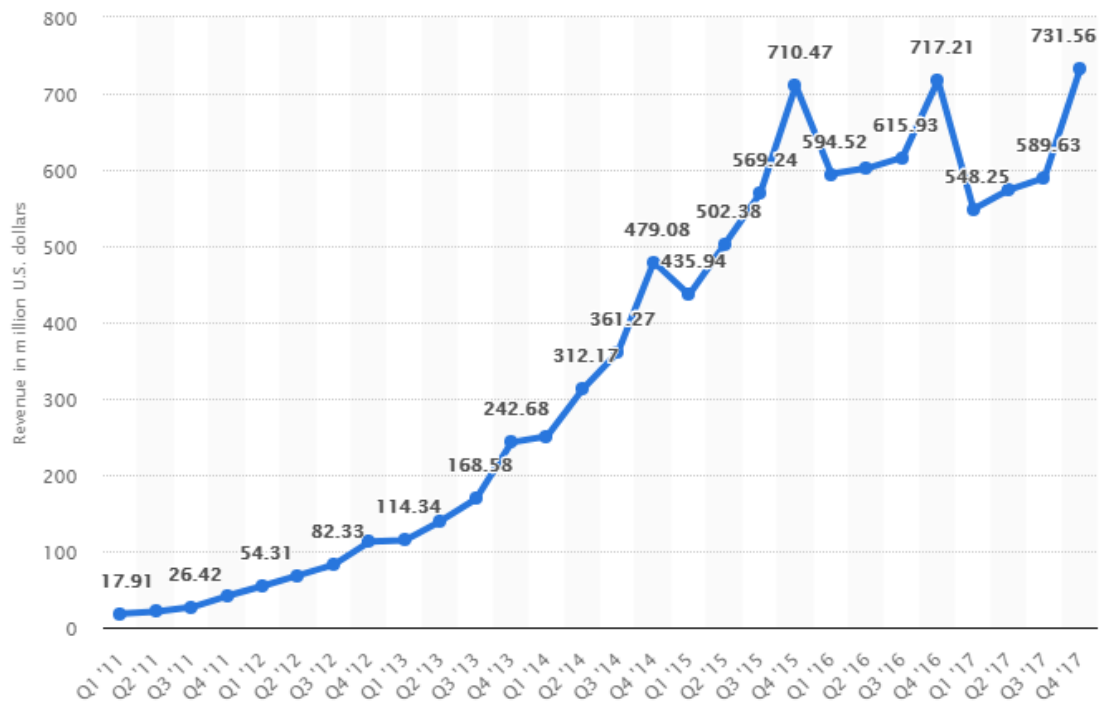


Figure 5: Facebook's global revenue as of 4th quarter 2017 (in million U.S. dollars).

The timeline 5 shows Facebook's quarterly revenues as of the fourth quarter of 2017. In the most recently reported period, the social network's total revenues amounted to 12.97 billion U.S. dollars, the majority of which were generated through advertising.[2]



© Statista 2018

Additional Information: Worldwide; Twitter; Q1 2011 to Q4 2017; GAAP revenue

Source: Twitter

Figure 6: Twitter's revenue from 1st quarter 2011 to 4th quarter 2017 (in million U.S. dollars).

This statistic 6 contains data on the quarterly revenue of Twitter from the first quarter of 2011 to the fourth quarter of 2017. In the last reported quarter, the social network generated a total revenue of over 731.56 million U.S. dollars, a 24 percent increase compared to the previous quarter.[2]

4. The pros and cons of a social network

Social networking has changed the way we communicate, do business, and get our daily news fix and so much more.

a) Pros [13]

Ability to connect to other people all over the world. One of the most obvious pros of using social networks is the ability to instantly reach people from anywhere.

Easy and instant communication. We can simply open up our laptops or pick up our smartphones and immediately start communicating with anyone.

Real-time news and information discovery. If you want to know what's going on in the world, all you need to do is jump on social media.

Great opportunities for business owners. Business owners and other types of professional organizations can connect with current customers, sell their products and expand their reach using social media.

General fun and enjoyment. You have to admit that social networking is just plain fun sometimes. A lot of people turn to it when they catch a break at work or just want to relax at home.

b) Cons [13]

Information overwhelm. Over time, we tend to rack up a lot of friends and followers, and that can lead to lots of bloated news feeds with too much content we're not all that interested in.

Privacy issues. With so much sharing going on, issues over privacy will always be a big concern.

Social peer pressure and cyber bullying. For people struggling to fit in with their peers — especially teens and young adults — the pressure to do certain things or act a certain way can be even worse on social media than it is at school or any other offline setting.

Online interaction substitution for offline interaction. It's a lot easier to use online interaction as a substitute for face-to-face interaction. Some people argue that social media actually promotes antisocial human behavior.

Distraction and procrastination. How often do you see someone look at their phone? People get distracted by all the social apps and news and messages they receive.

Sedentary lifestyle habits and sleep disruption.

5. How a social network works

a) Creating a profile

This is the first step to use the social network,⁷ but is not important for any site like YouTube.

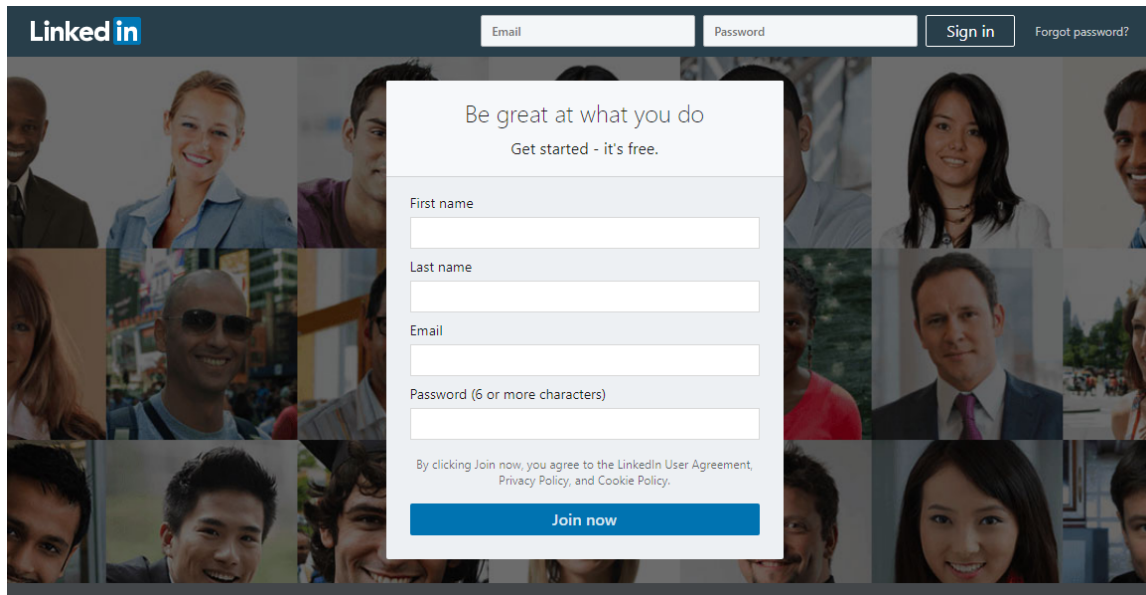
The image shows a LinkedIn sign-up form overlay on a background of a grid of diverse people's faces. The form is white with a blue border. At the top, it says "Be great at what you do" and "Get started - it's free." Below this are four input fields: "First name", "Last name", "Email", and "Password (6 or more characters)". At the bottom, there is a blue "Join now" button. Above the button, there is a small line of text: "By clicking Join now, you agree to the LinkedIn User Agreement, Privacy Policy, and Cookie Policy." The background also shows the LinkedIn logo and "Sign in" and "Forgot password?" links at the top.

Figure 7: creating a profile.

b) Manage personal member page

Each member of the network describes his profile, his professional experience, his family situation and everything he wants to share with the rest of the page. Collects all the member's contributions and very often a "comment wall" allowing other members to post a message. The member page allows you to learn about a member and follow his activity.

c) Consult Network Members

This feature shows the list of registered members and allows access to different profile pages. If you are looking for someone in particular, this feature is mainly for newcomers. It allows to discover the other members of the network and to join.

d) Search and invite my friends

In this function the member has tools to search for members and suggestions for additions to his contacts, e.g. among the friends of his friends or members of a group sharing the same interests.

e) Chat in the forums

The forum allows to initiate a discussion. It is one of the first collaborative solutions.

f) Join groups

The Group feature allows you to divide the members to find a human dimension. This feature usually allows you to create a specific forum and a page showing the members who subscribe to it.

g) Consult the new information

This enable feature displays all new information! New registrations, updates for each member, blog posts, discussions, group news ... etc.

h) Events

The calendar brings together all the events you create to give your members an overview through a dynamic calendar.

i) Share my resources

Networks allows you to share videos, photos, etc. and comment on them posted. Like YouTube [8](#) it is not necessary to be registered to watch the videos posted. But to post videos and comments, a YouTube subscription is mandatory.

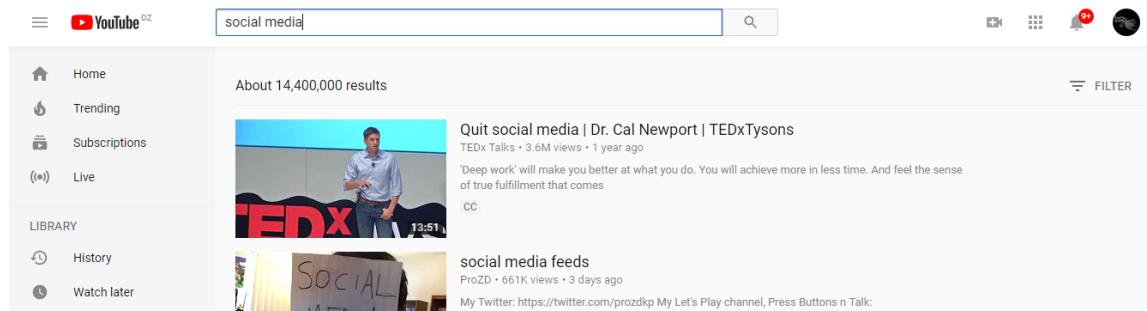
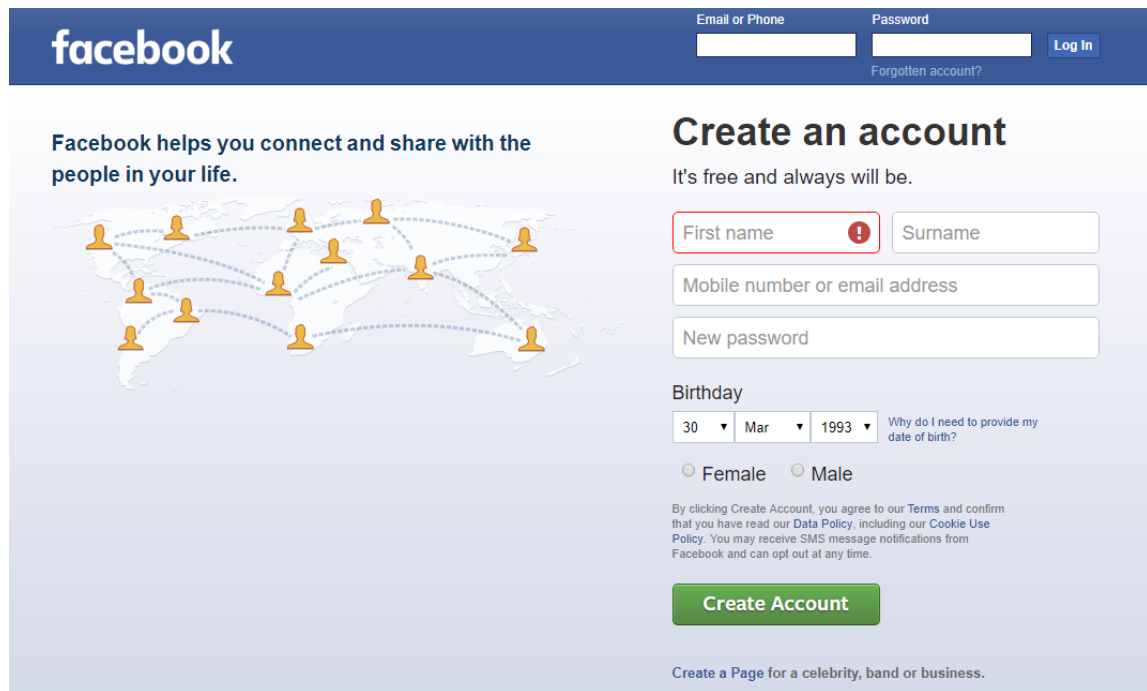


Figure 8: Graphic presentation of the sharing feature.

6. Examples of social network

a) Facebook

Facebook [9](#) is a popular free social networking website that allows registered users to create profiles, upload photos and video, send messages and keep in touch with friends, family and colleagues. The site, which is available in 37 different languages.



The image shows the Facebook homepage layout. At the top is a dark blue header with the 'facebook' logo on the left. On the right, there are input fields for 'Email or Phone' and 'Password', a 'Log In' button, and a link for 'Forgotten account?'. Below the header, the main content area is split. On the left, a message reads 'Facebook helps you connect and share with the people in your life.' accompanied by a world map with orange person icons and dashed lines representing connections. On the right, the 'Create an account' section is titled 'Create an account' with the subtext 'It's free and always will be.' Below this are several input fields: 'First name' (with a red error icon), 'Surname', 'Mobile number or email address', and 'New password'. There is also a 'Birthday' section with dropdowns for day (30), month (Mar), and year (1993), and radio buttons for 'Female' and 'Male'. A small note explains why a date of birth is needed. At the bottom of the form is a green 'Create Account' button. Below the button, a link says 'Create a Page for a celebrity, band or business.'

Figure 9: Facebook interface.

i. Includes public features such as:

Marketplace. Allows members to post, read and respond to classified ads.

Groups. Allows members who have common interests to find each other and interact.

Events. Allows members to publicize an event, invite guests and track who plans to attend.

Pages. Allows members to create and promote a public page built around a specific topic.

Presence technology. Allows members to see which contacts are online and chat.

b) LinkedIn [10](#)

A business-oriented social networking site that enables users to connect with colleagues, look for a job or business relationships and get answers to industry questions. LinkedIn users invite people they know and trust to become "linked in" to them, and the business connections of invited users are in turn linked. However, in order to reach connections down the line, requests for introductions have to be made. [7]

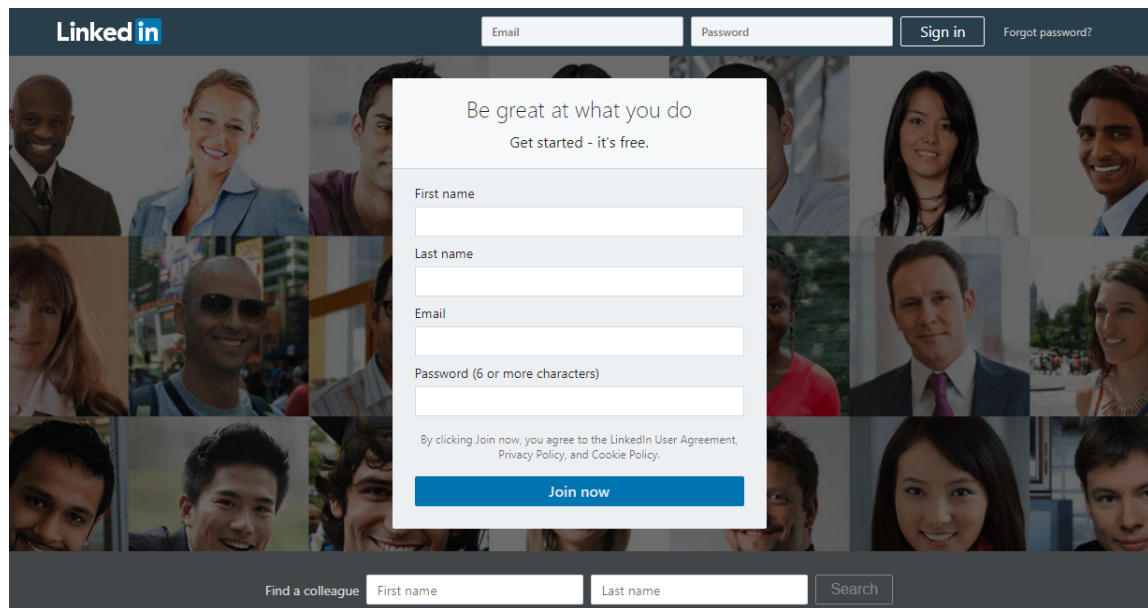


Figure 10: LinkedIn interface.

i. LinkedIn's Main Features

Home. Once you've logged in to LinkedIn, the home feed is your news feed, showing recent posts from your connections with other professionals and company pages you're following.

Profile. Your profile shows your name, your photo, your location, your occupation and more...

My Network. Here you'll find a list of all the professionals you're currently connected with on LinkedIn.

Jobs. All sorts of jobs listings are posted on LinkedIn everyday by employers, and LinkedIn will recommend specific jobs to you based on your current information.

Interests. In addition to your connections with professionals, you can follow certain interests on LinkedIn as well.

Search bar. LinkedIn has a powerful search feature that allows you to filter your results down according to several different customizable fields.

Messages. When you want to start a conversation with another professional, you can do so by sending them a private message through LinkedIn.

Notifications. Like other social networks, LinkedIn has a notification feature that lets you know when you've been endorsed by someone, invited

to join something or welcomed to check out a post you might be interested in.

Pending Invitations. When other professionals invite you to connect with them on LinkedIn, you'll receive an invitation that you'll have to approve.

7. Social Media

The online forms of communication that individuals and companies use to share information with interested parties (friends, colleagues, customers, etc.). Social media include microblogging sites such as Twitter and social networking sites such as Facebook. A primary feature of social media is that people actively follow someone who is posting content, and they are able to respond. [8]

The “**social**” part: refers to interacting with other people by sharing information with them and receiving information from them.

The “**media**” part: refers to an instrument of communication, like the internet (while TV, radio, and newspapers are examples of more traditional forms of media).

Social Media Landscape 2017

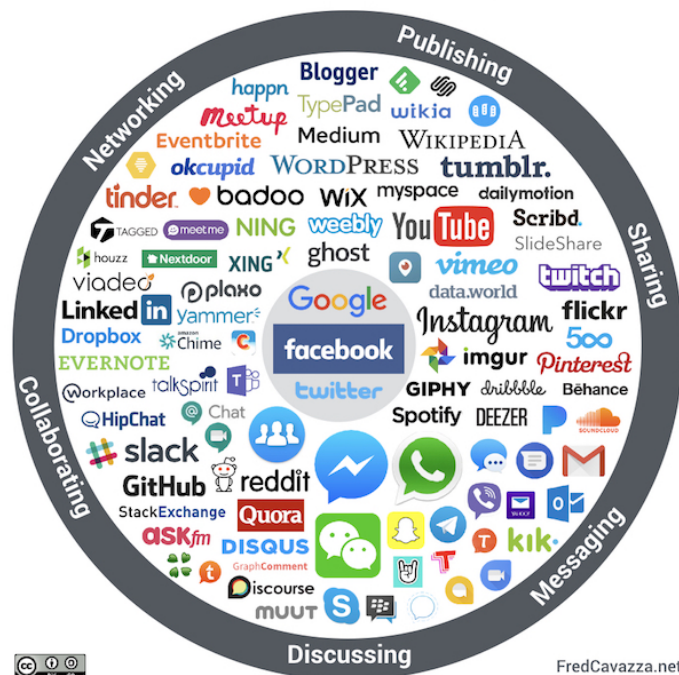


Figure 11: social media 2017.

2.6 PROBLEMS OF WORKERS

When the person starts the search for a source of income, he chose one of the methods of work.

But he will have a lot of difficulties, especially workers, the most important problems of workers:

- Failure to find suitable work place.
- Lack of professional experience.
- Problems of marketing himself professionally.
- Lack of social and professional relations.

Are all reasons that make the workers to go to the platforms of freelancing because of solutions to their problems .

2.6.1 *Freelance*

Working on a contract basis for a variety of companies, as opposed to working as an employee for a single company. [6]

2.6.1.1 *Freelancer*

A freelancer or freelance worker is a term commonly used for a person who is self-employed and is not necessarily committed to a particular employer long-term. Freelance workers are sometimes represented by a company or a temporary agency that resells freelance labor to clients; others work independently or use professional associations or websites to get work. [20]

2.6.1.2 *Types of freelancers*

- side-project freelancers
- Full time freelancers
- Single contract freelancers
- Freelance business owners

Part III

FINDHANDICRAFT

Is a social networking network within the world of large.

ANALYSE & DESIGN FINDHANDICRAFT

3.1 INTRODUCTION

System design is the process of defining the elements of a system such as the architecture, modules and components, the different interfaces of those components and the data that goes through that system. It is meant to satisfy specific needs and requirements of a business or organization through the engineering of a coherent and well-running system, the basic model serves as the basis for the next programming phase. [17]

For the implementation of our social network website "FindHandicraft" we have adopted the UML "Unified Modeling Language" as a modeling language.

3.2 WHAT IS FINDHANDICRAFT

Is a social networking network within the world of large, business-oriented social networking, professionals and individuals looking for work and seeking to build their networks to reach customers (clients). FindHandicraft is also a marketing tool for a job because customers interact with those interested in their services by answering questions, engaging in discussions, etc. customers can advertise a job through FindHandicraft and reach the largest number of researchers.

3.3 WHY CREATED FINDHANDICRAFT

The difficulty of finding suitable jobs is increasing every day, and the high number of those who request them has to be an appropriate means of communication between them, and make sure they stay in touch and keep their names and their reputation spread in the world of work.

In our workers face several difficulties prevent them from finding work. Most notably, not finding a suitable place to work, a lack of professional experience, problems in marketing themselves professionally and lack of social and professional relationships, where many workers have the talent and efficiency needed to perform work perfectly, but they can't find work because of the absence of social and professional relationships.

We thought in solving them, and for labor market development in the region, we designed this social site which named ' FindHandicraft ' discover the goal of his creation.

3.4 GENERAL ARCHITECTURE OF THE FINDHANDICRAFT

Through structures of social networks we have seen in the first chapter and from our design, we present the overall architecture of our platform "FindHandicraft" in figure next [12](#)

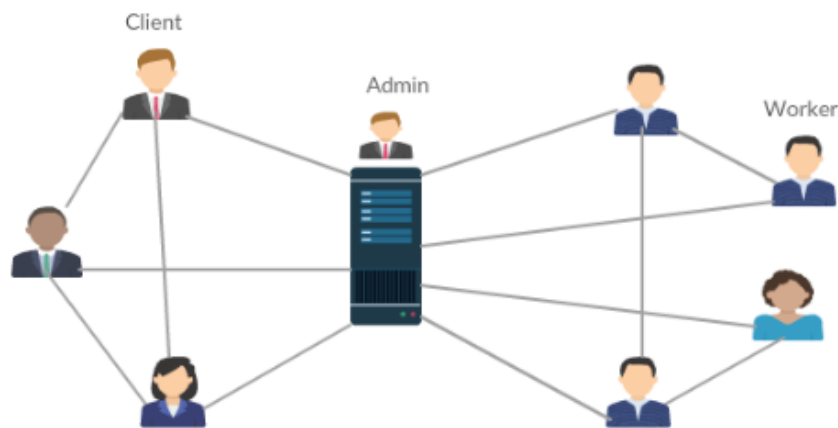


Figure 12: architecture of our platform.

From the above architecture [12](#), the "FindHandicraft" consists of three main components:

- Client :

This component represents registered customers who are looking for workers to complete their projects, and could be a visitor only.

- Worker :

This component represents the registered workers in all categories of work are available on platform .

- Admin :

This component represents the main Manager of the platform .

3.5 DESCRIPTION OF THE FEATURES OF THE FINDHANDICRAFT

In the following, we are talking about our professional social network features that will be organized into five topics.

3.5.1 *Users management*

This topic is made for managing members and their features.

3.5.1.1 *Management of personal spaces*

It manages the profile information of the member to be displayed and the privileges of the members.

3.5.1.2 *Notification Management*

It manages alerts, messages sent to members and all new requests for project... etc .

3.5.2 *Community Management*

This topic is oriented towards community management assistant functionalities.

3.5.2.1 *Management of members*

This option manages all members of our “FindHandicraft” system, whether friends or not, and view its profile pages and their friends, groups and their events.

3.5.2.2 *Group management*

This manages the groups that exist in “FindHandicraft”, like joining it to one or several groups and unlike removing it from these groups.

3.5.2.3 *Event management*

It manages from an agenda and calendar the upcoming events concerning the community of members.

3.5.3 *Communication Management*

This topic brings together all the functionalities that allow the exchange, sharing and management of resources and the knowledge of the community.

3.5.3.1 *Message management*

This feature allows members to exchange messages and manage its boxes of messages.

3.5.3.2 *Management of the Posts*

this is the feature that allows members to exchange ideas and knowledge.

3.5.3.3 *Photo management*

This feature allows sharing of photos between members, and organize the photos into albums.

3.5.3.4 *Management instant messages (Chat)*

This is the feature that allows members to make synchronous conversations and discussions.

3.5.4 *Administration Management*

3.5.4.1 *Registration Management*

It manages registrations, profiles, and identifications of members to access personal spaces. This feature is done by the administration.

3.5.5 *Projects Management*

this topic ,member (as worker) can manage his projects .

3.5.5.1 *Project Management*

it manage project mean ,add project ,edit project and delete it .

3.5.5.2 *Request Management*

manage request mean ,consult requests project which come from the clients . After this, can accept request or remove it .

3.6 SPECIFICATION OF THE FEATURES OF THE FINDHANDICRAFT

In this section, we specify the functionality of our system using UML use case diagrams, scenarios and sequence diagrams. These diagrams are classified according to the topics defined previously.

3.6.1 *User Management*

3.6.1.1 *Management of personal spaces*

1. Use case diagram of personal space consultation

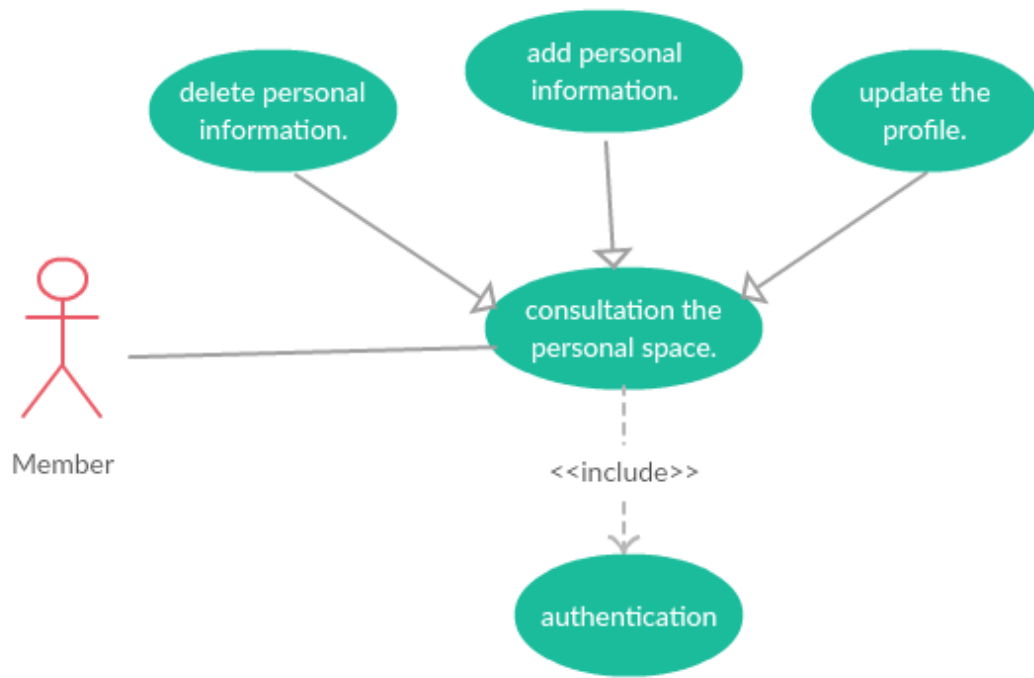


Figure 13: Use case diagram of personal space consultation.

System use case: consulting personal space

Actor: Member

Description: After the user authenticates to the “FindHandicraft” platform, he can consult the personal space

Scenario:

- Initially the member authenticates himself to the “FindHandicraft” platform.
- The system displays the personal page.
- The member selects the option to modify the profile.
- The system displays the modification page.
- Member modifies or adds information.
- The system requests confirmation of the information.
- The member confirms his information.
- The system update the information.

2. Sequence diagram for consulting the personal space

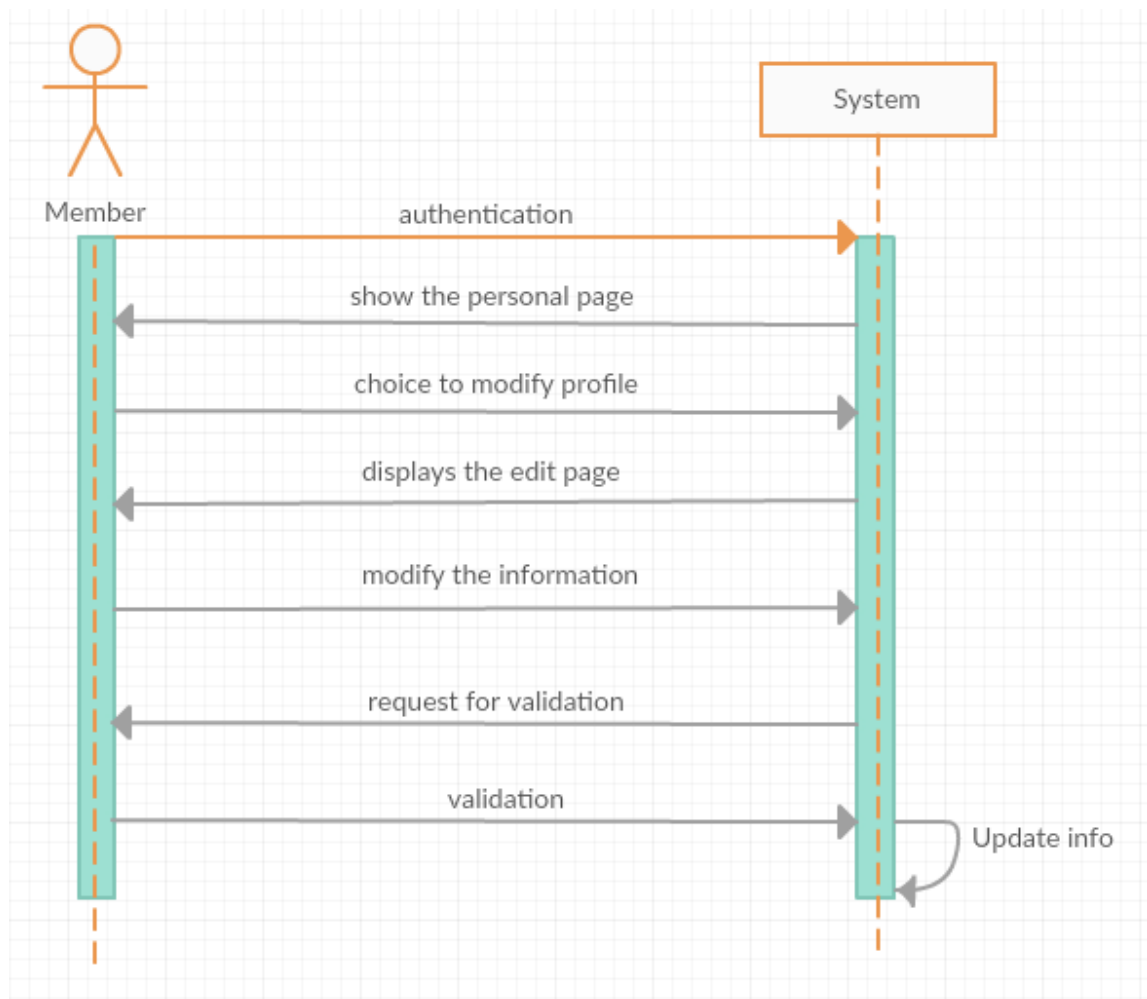


Figure 14: Sequence diagram for consulting the personal space.

3.6.1.2 Notification Management

1. Use case diagram of consultation of notifications

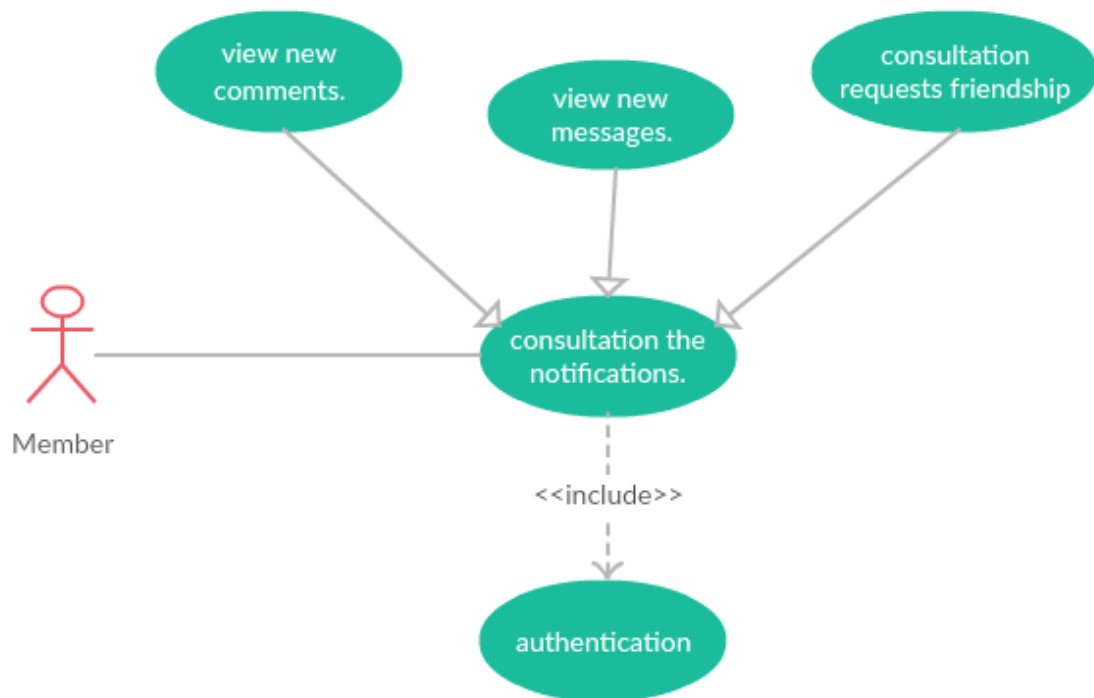


Figure 15: Use case diagram of consultation of notifications.

System use case: viewing notifications

Actor: Member

Description: After the user authenticates to the “FindHandicraft” platform, he can view the notifications.

Scenario:

- At the beginning, the member authenticates himself to the "FindHandicraft" platform.
- The system displays the personal page.
- The member selects the option to view notifications.
- The system displays the notifications.
- The member selects a notification.
- the system displays the contents of the selected notification.

2. Sequence diagram for viewing notifications

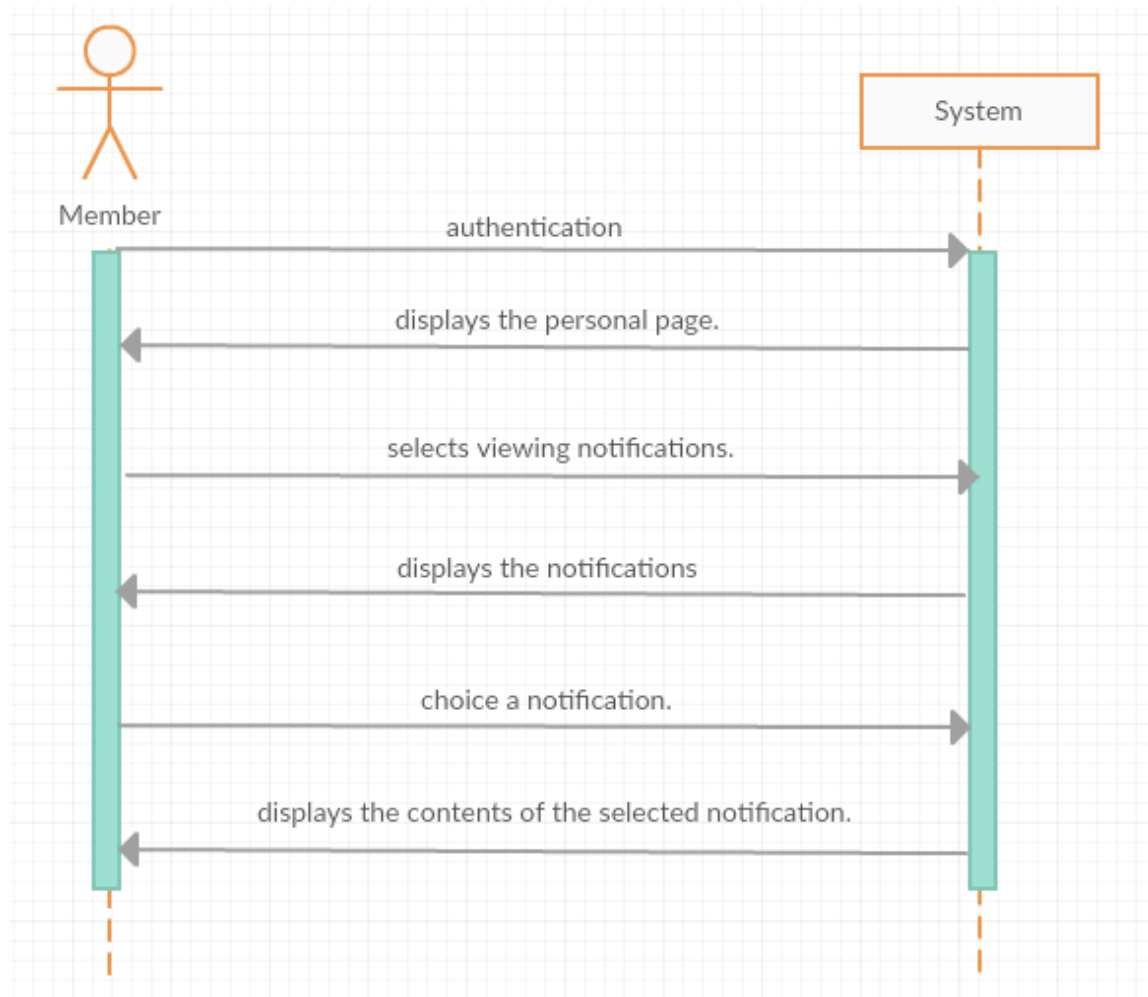


Figure 16: Sequence diagram for viewing notifications.

3.6.2 Community Management

3.6.2.1 Member Management

1. Member Management Use Case Diagram



Figure 17: Member Management Use Case Diagram.

System use case: Consulting the profiles of the members.

Actor: Member

Scenario:

- The first member authenticates to the platform.
- The first member accesses the personal page of the second member by searching or direct access by a Uri request.
- The system displays the profile of the selected member.

System use case: add as friend

Actor: Member

Scenario:

- The first member authenticates to the platform.
- The first member accesses the personal page of the second member by searching or direct access by a Uri request.

- The system displays the profile of the selected member.
- The first member chosen "add as a friend".
- The system sends an alert to signal to the second member if he wants to accept the friendship of the first member.
- The second accepts the request of the first member.
- The system adds the first member in the second member's contacts and vice versa.
- The system sends an alert to notify the first member of the acceptance of his request.

2. Sequence diagram for add as a friend

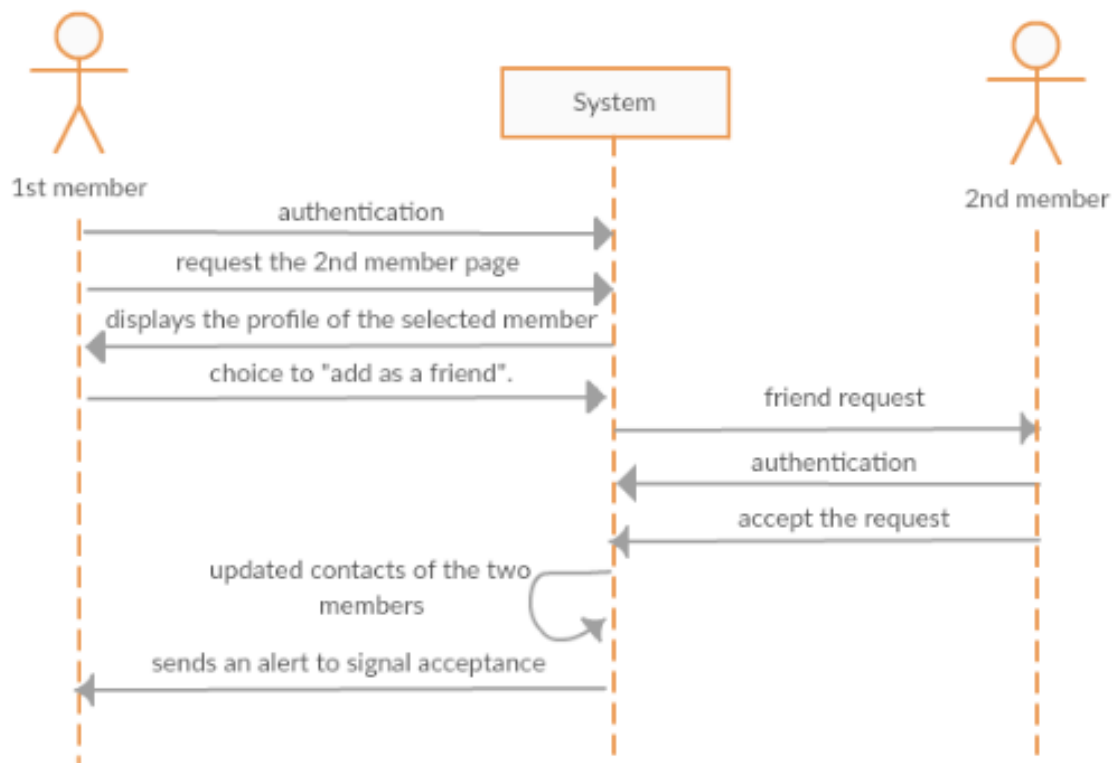


Figure 18: Sequence diagram for add as a friend.

3.6.2.2 Group Management

1. group management use case diagram

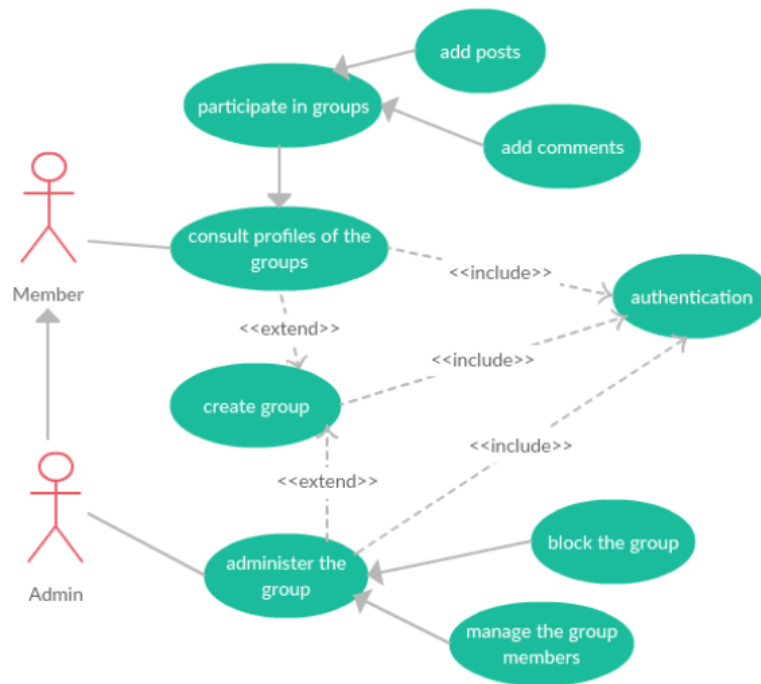


Figure 19: group management use case diagram.

System use case: View group profiles.

Actor: Member, Admin.

Scenario:

- The member authenticates to the platform.
- The member accesses the group profile page by searching or direct access by a URL request.
- The system displays the profile of the selected group.

System use case: Participate in groups.

Actor: Member.

Scenario:

- The member authenticates to the platform.
- The member accesses the group profile page by searching or direct access by a URL request.
- The system displays the profile of the selected group.
- The member chooses to participate in this group.
- The system adds the member to the group participants.

2. Sequence diagram for Participating in groups

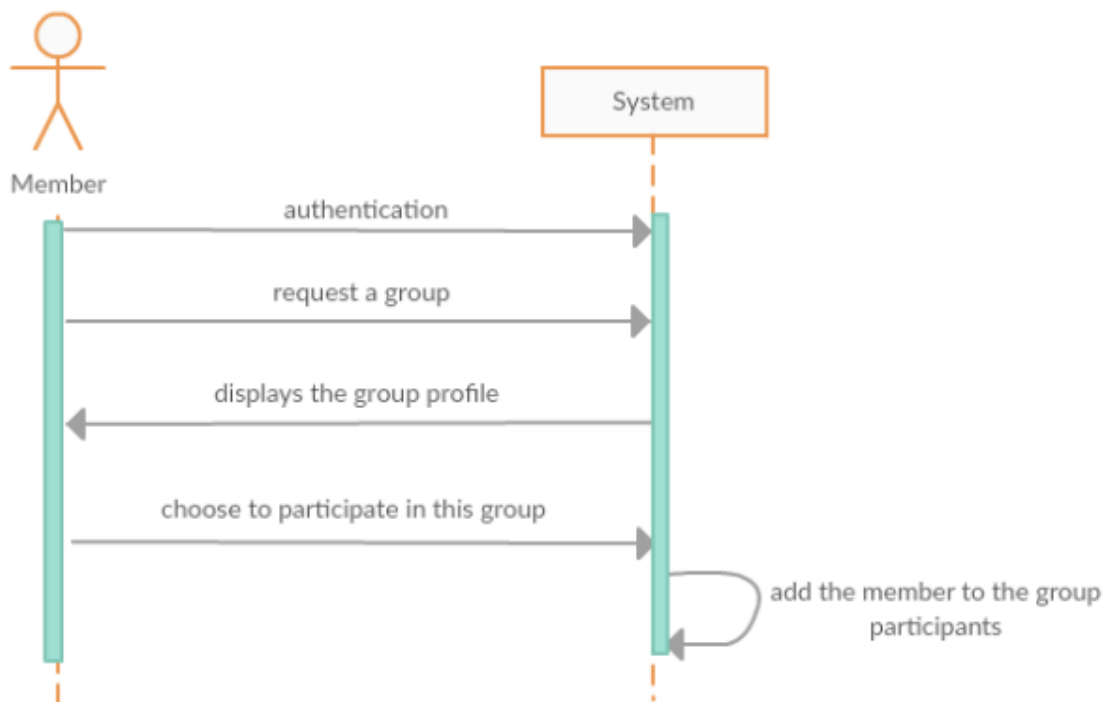


Figure 20: Sequence diagram for Participating in groups.

3.6.2.3 Event Management

1. Event Management Use Case Diagram

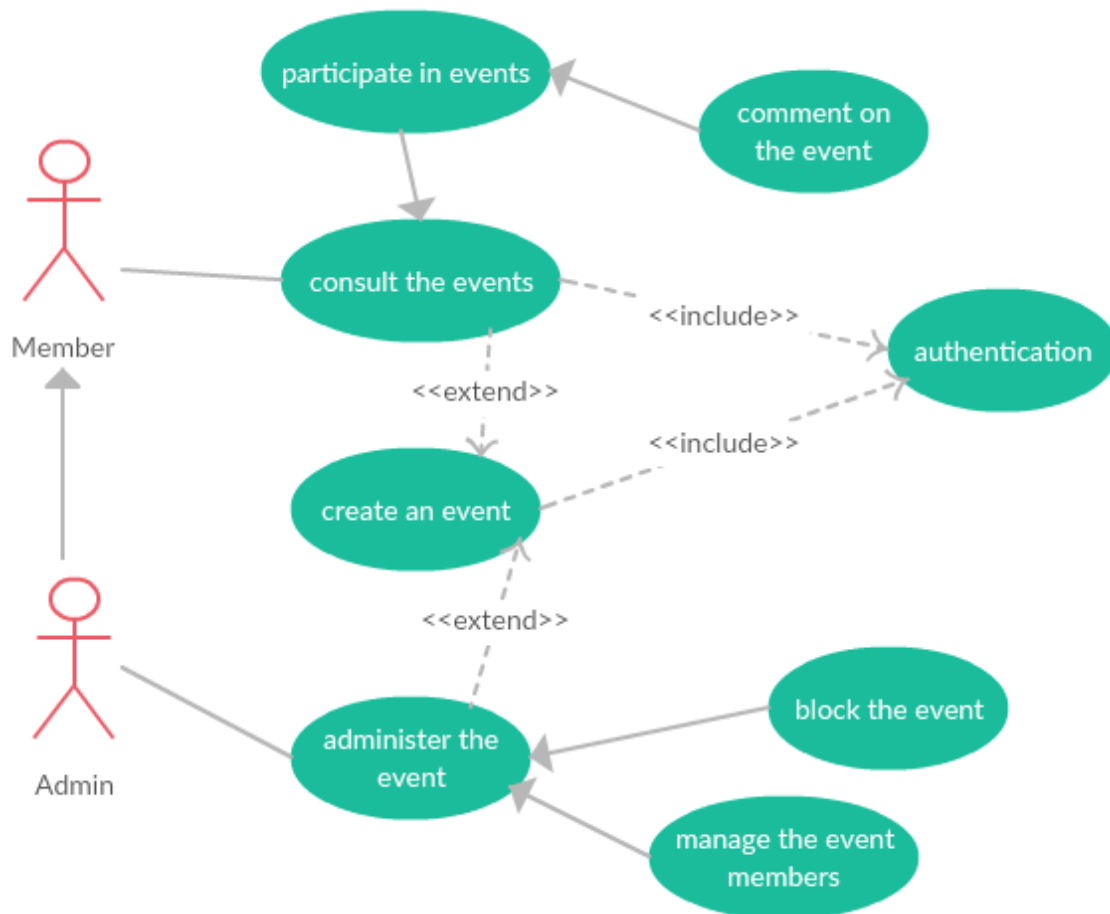


Figure 21: Event Management Use Case Diagram.

System use case: Participate in Events**Actor:** Member.**Scenario:**

- The member authenticates to the platform.
- The member accesses the event page by searching or direct access by a URL request
- The system displays the content of the selected event.
- The member chooses to participate in this event.
- The system sends an alert to notify the admin of the event if he wants to accept the member's request.
- The admin accepts the request of the member.
- The system adds the member in the participants of the event

- The system sends an alert to notify the member of the acceptance of the request.

2. Sequence diagram of Participate in events

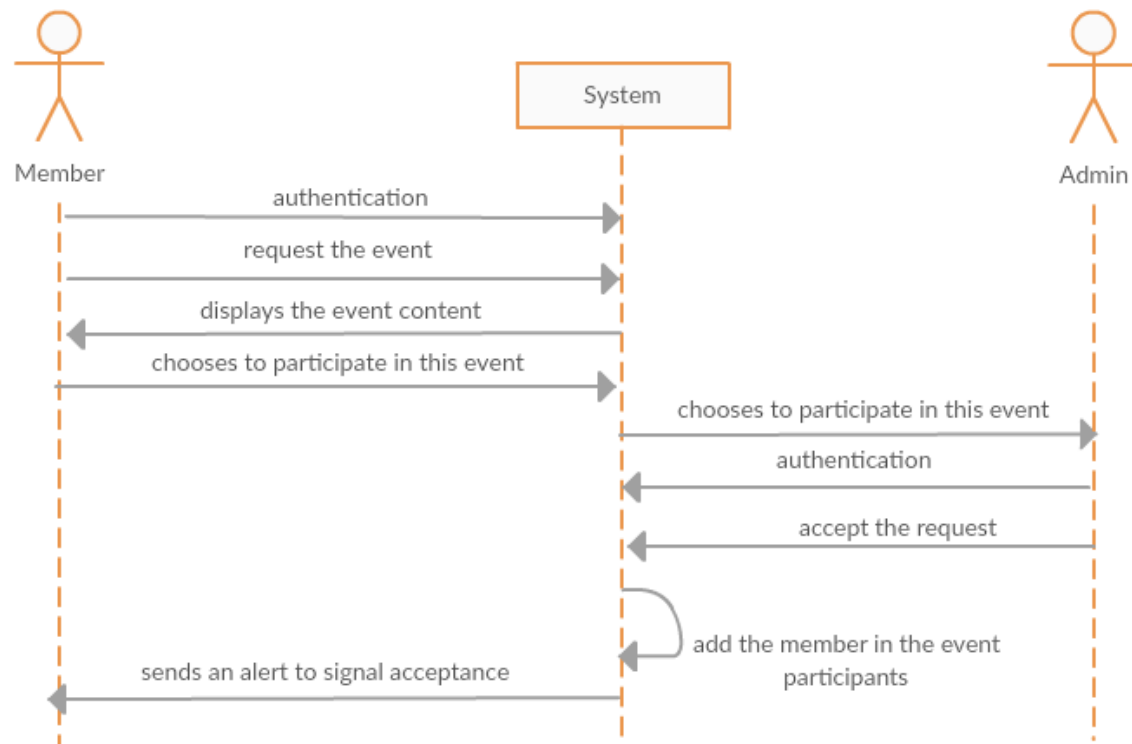


Figure 22: Sequence diagram of Participate in events

3.6.3 Communication Management

3.6.4 Management of messages

1. Use case diagram of message management

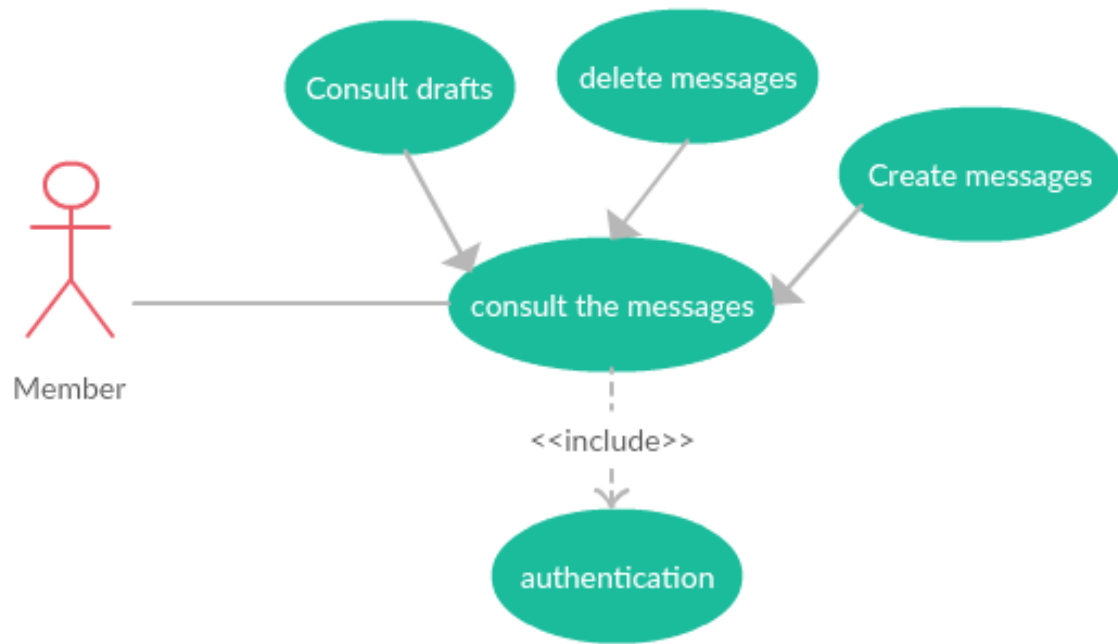


Figure 23: Use case diagram of message management

System use case: Create messages

Actor: Member.

Scenario:

- The member authenticates to the platform.
- The system displays the personal page.
- The member requests the Messages page.
- The system displays the messages page.
- The chosen member “Create a message”.
- The system displays the creation form.
- The member fills the information of the message.
- The system sends the message to the relevant members of this message.

3.6.4.1 Management of Topic

1. Topic management use case diagram

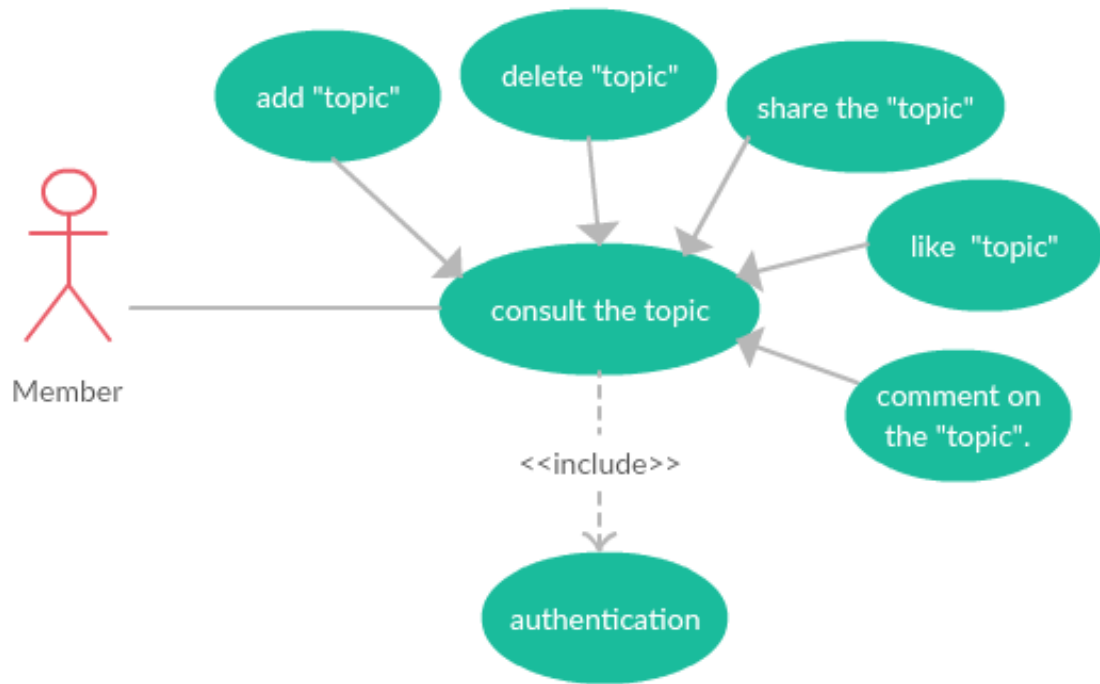


Figure 24: Topic management use case diagram

System use case:Add Topic**Actor:** Member.**Scenario:**

- The member authenticates to the platform.
- The system displays the personal page.
- The selected member type of Topic (Text,Photo ...).
- The system displays the creation form.
- The member fills in the information of Topic.
- The member sends the information.
- The system checks the accuracy of the information entered.
- The system displays the Topic.
- The system creates and adds the Topic in the member's Topic list.

System use case:like the Topic or share Topic**Actor:** Member.**Scenario:**

- The member authenticates to the platform.

- The system displays the personal page.
- The member accesses the Topic concerned.
- The chosen member like or share.
- The system sends an alert to report to the creator of this Topic.
- The system adds the Topic in the list of Topic of the member (*).
- (*) add the Topic with the information of its creator.

System use case:Comment on Topic

Actor: Member.

Scenario:

- The member authenticates to the platform.
- The system displays the personal page.
- The member accesses the comment section of the "Topic" concerned.
- The member write the comment and validate.
- The system displays the comment.
- The system sends an alert to report to the creator of this Topic and friends..
- The system adds the comment in the comment list of this Topic.

2. Sequence diagram of Add Topic

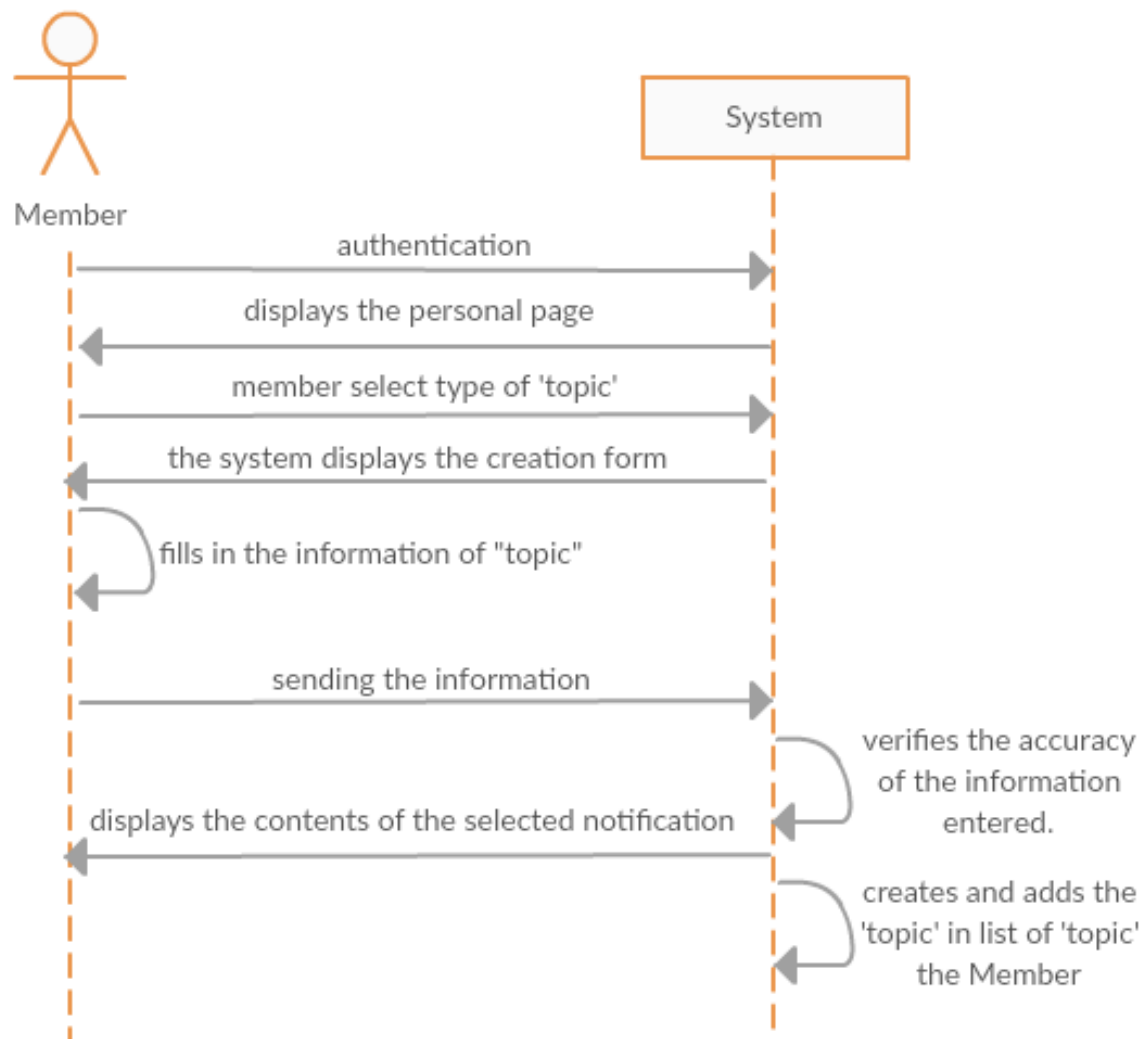


Figure 25: Sequence diagram of Add Topic

3.6.4.2 Photo Management

1. Photo management use case diagram

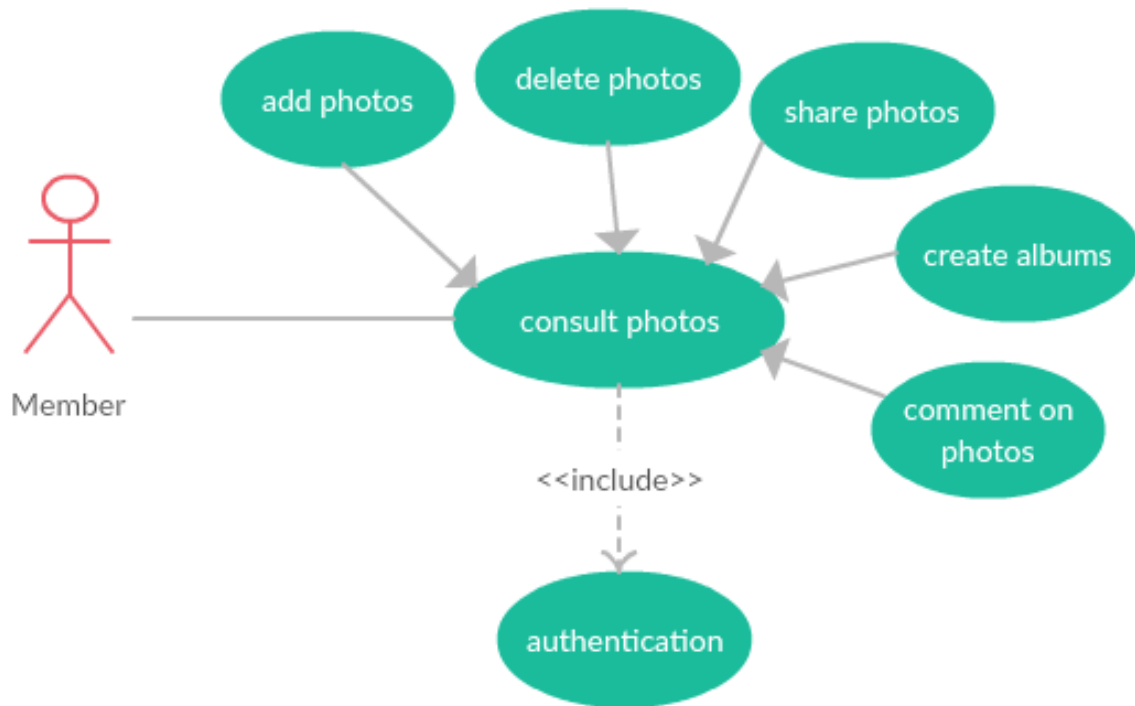


Figure 26: Photo management use case diagram

System use case:Create albums

Actor: Member.

Scenario:

- The member authenticates to the platform.
- The system displays the personal page.
- The member requests the photos page.
- The system displays the photos page.
- The chosen member creates an album.
- The system displays the creation form.
- The member fills in the information of the album.
- The member sends the information.
- The system checks the accuracy of the information entered.
- The system creates and adds the album to the member's albums list.

3.6.4.3 Management of instant messages (Chat)

1. Use case diagram of (Chat) management

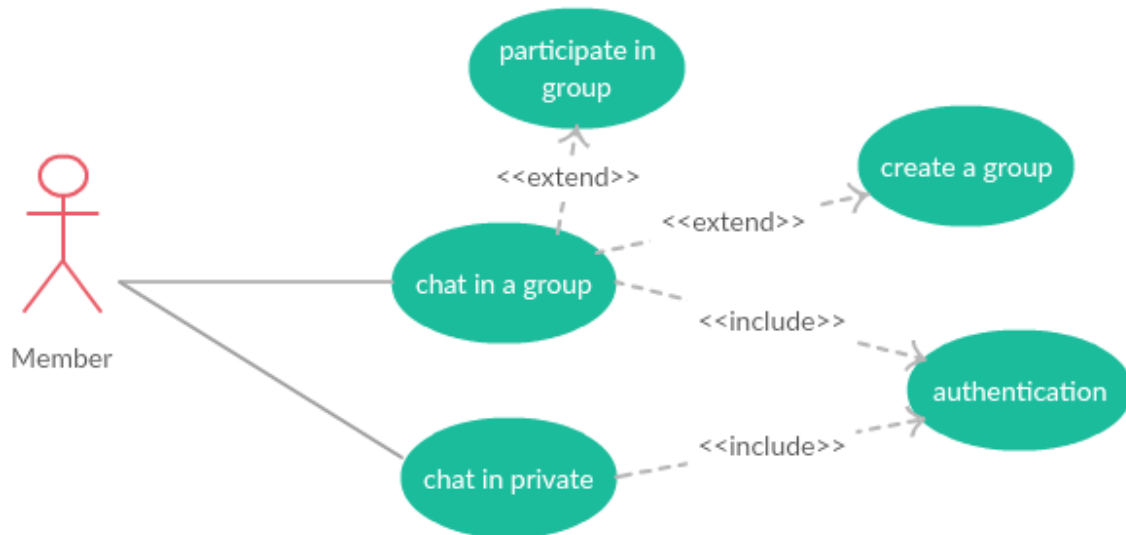


Figure 27: Use case diagram of (Chat) management

System use case: Chat in private.

Actor: Member.

Scenario:

- two members are connected (*).
 - The first member accesses the list of connected friends.
 - The member selects the friend.
 - The system displays a window to write and view the messages exchanged.
 - The member write in the write field and send the message.
 - The system opens a window to view and write messages in the personal space of the second member.
 - The second member responds to messages by writing other messages and sends the message.
 - The system view and write messages in the personal space of the first member.
- (*) two members are friends.

System use case: Chat in a group

Actor: Member.

Scenario:

- The member authenticates to the platform.
- The system displays the personal page.

- The member accesses the list of groups.
- The member selects the group.
- The system displays a window to write and view the messages exchanged.
- The member write in the write field and send the message.
- The system view and write messages in the personal spaces of the participants of this group and are connected to the site.

3.6.5 Administration Management

3.6.5.1 Registration Management

1. Use case diagram of Registration Management

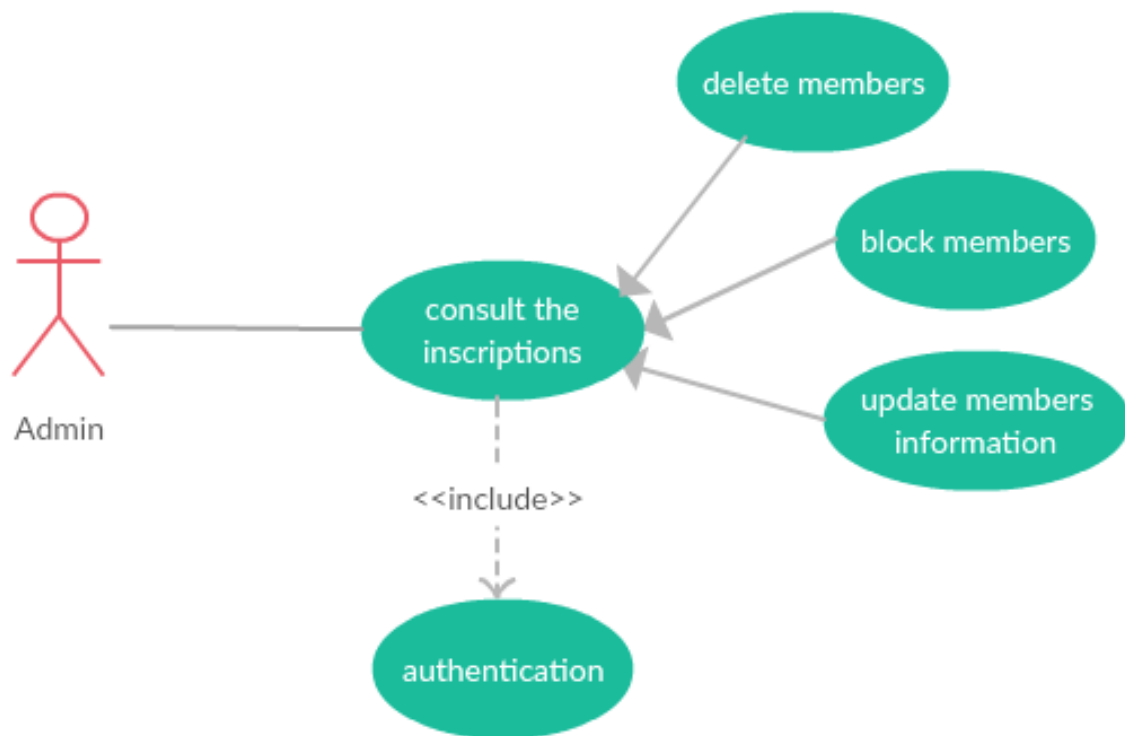


Figure 28: Use case diagram of Registration Management

System use case:block members

Actor:Admin.

Scenario:

- The admin authenticates to the platform.
- The system displays the personal page.
- The admin asks the page of admin tools.
- The system displays the admin tools page.
- The admin chose the member then block.
- The system requests confirmation.
- The admin confirms the action.
- The system blocks the member.
- The system sends an email informing the member that the administrator has blocked his account.

3.6.6 Projects Management

3.6.6.1 Project Management

1. Use case diagram of Project Manage

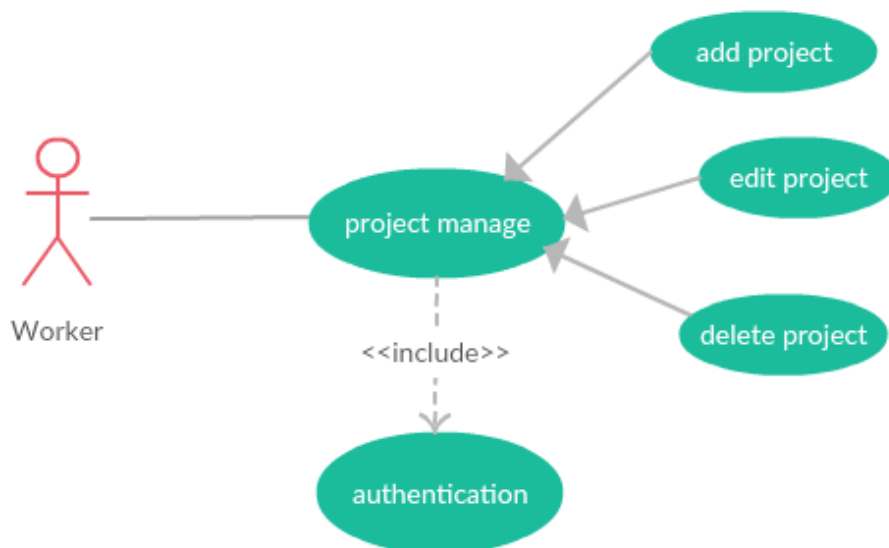


Figure 29: Use case diagram of Project Manage

System use case: add project**Actor:**Member (worker)**Scenario:**

- The worker authenticates to the platform.
- The system displays the personal page.
- The worker asks the page of projects manage.
- The system displays the projects manage page.
- The worker choose the add project.
- The system displays the add form.
- The worker fills in the information of project.
- The worker sends the information.
- The system checks the accuracy of the information entered.
- The system displays the "project" in table of projects.

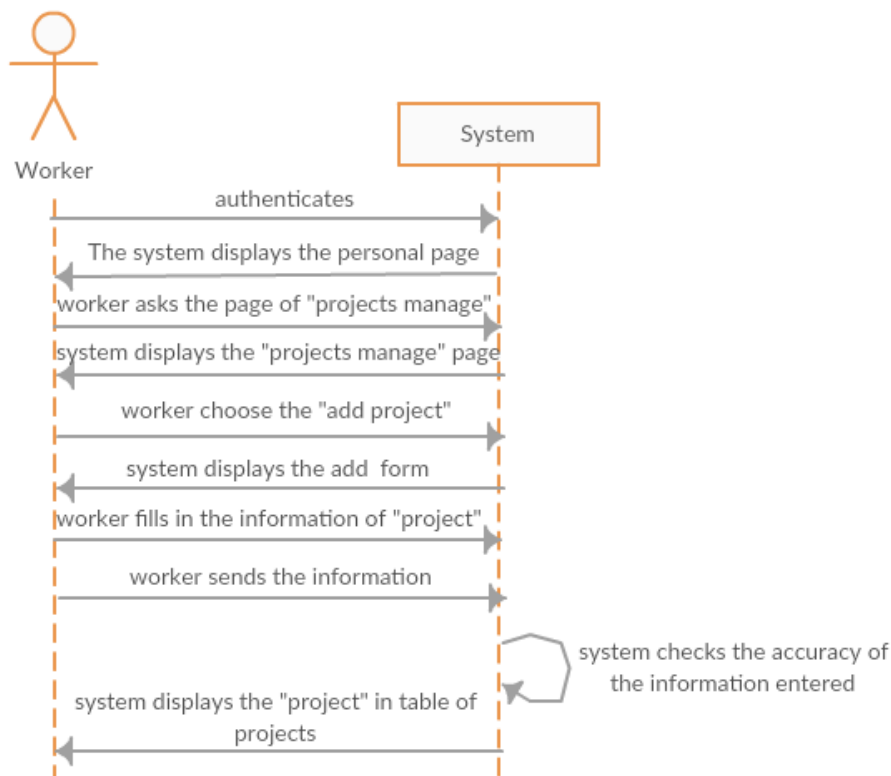
2. Sequence diagram of project manage

Figure 30: Sequence diagram of project manage

3.6.6.2 *Requests Manage*

1. Use case diagram of Requests Manage

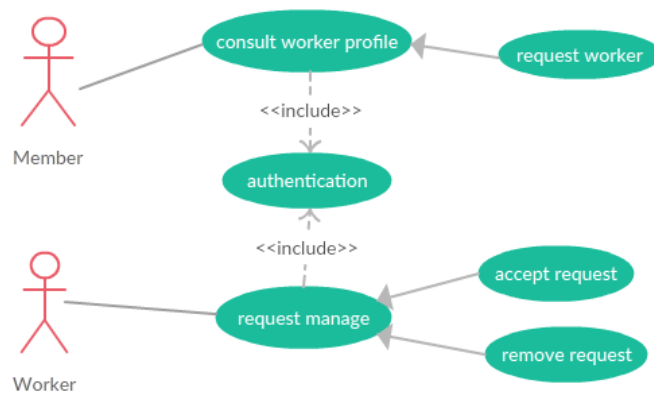


Figure 31: Use case diagram of Requests Manage

System use case: : Accept request

Actor:Member (worker)

Scenario:

- The worker authenticates to the platform.
- The system displays the personal page.
- The worker asks the page of projects manage.
- The system displays the projects manage page.
- The worker choose the Requests.
- The system displays the table of requests.
- The worker consult request.
- The worker accept request.
- The system add the client in the add project page.
- The system notificate the client.

3.7 DESIGN OF THE DATABASE AND CLASSES

3.7.1 Class diagram

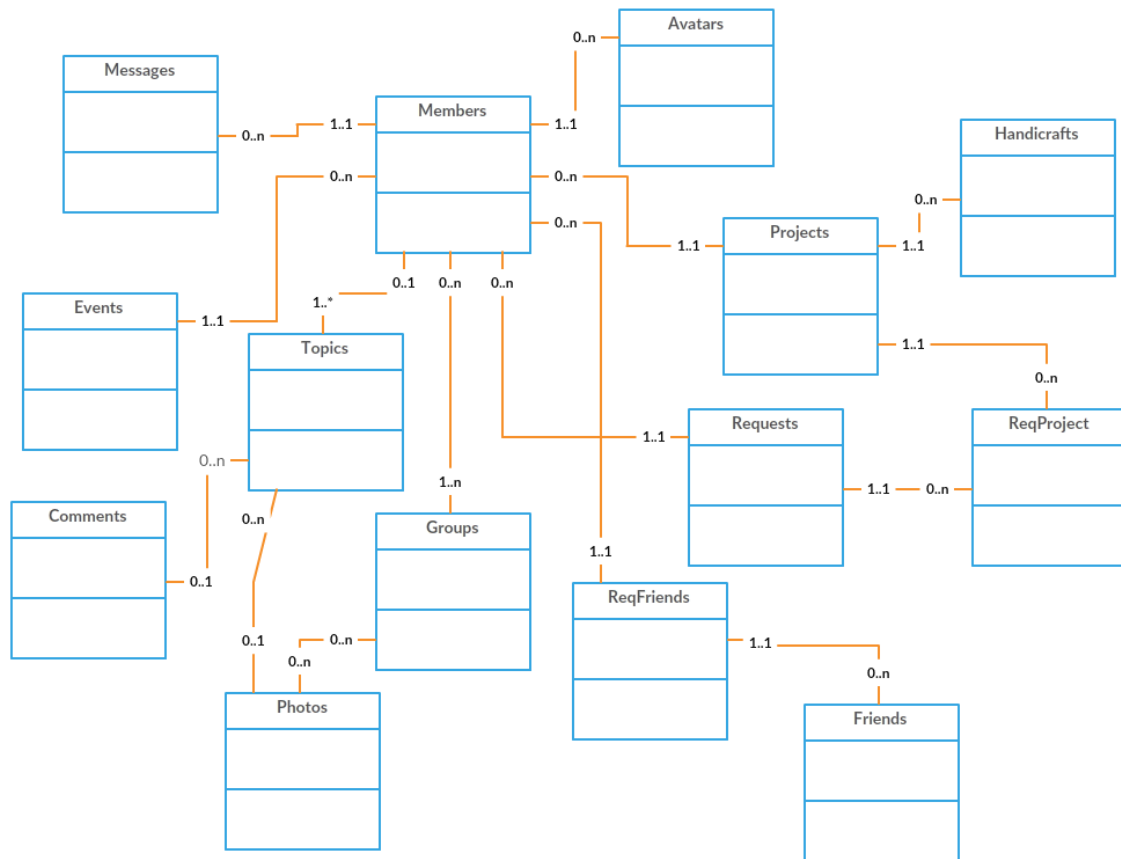


Figure 32: Class Diagram.

3.8 CONCLUSION

In this chapter, we proposed the general architecture of our platform of the professional social network “FindHandicraft” and the explanation of its components; we have also illustrated the design of the system that we have developed.

In the following, we will explain the different development tools to implement our system “FindHandicraft”.

SYSTEM IMPLEMENTATION FINDHANDICRAFT

4.1 INTRODUCTION

We will detail in this chapter all modules made for our “FindHandicraft” platform. For this we based on the detailed design in the previous chapter.

We start with an illustration of the different development tools. Then we present the different components and interfaces of our platform.

4.2 LOGICAL ARCHITECTURE

The architecture of our application is a 3-tier architecture [33](#), it includes three layers:

- **Presentation layer:** This corresponds to the portion of the application that is visible and interactive with the users. We are talking about the Human Machine Interface. In computer science, it can be done by a graphical or textual application. It can also be represented in HTML to be exploited by a web browser.
- **Business layer (data processing):** It corresponds to the functional part of the application, the one that implements the "logic", and describes the operations that the application operates on the data according to the requests of the users, made through the presentation layer. The various management and control rules of the system are implemented in this layer.
- **Data Access Layer:** This consists of the portion that manages access to the system's data deposits. These data may be system specific, or managed by another system.

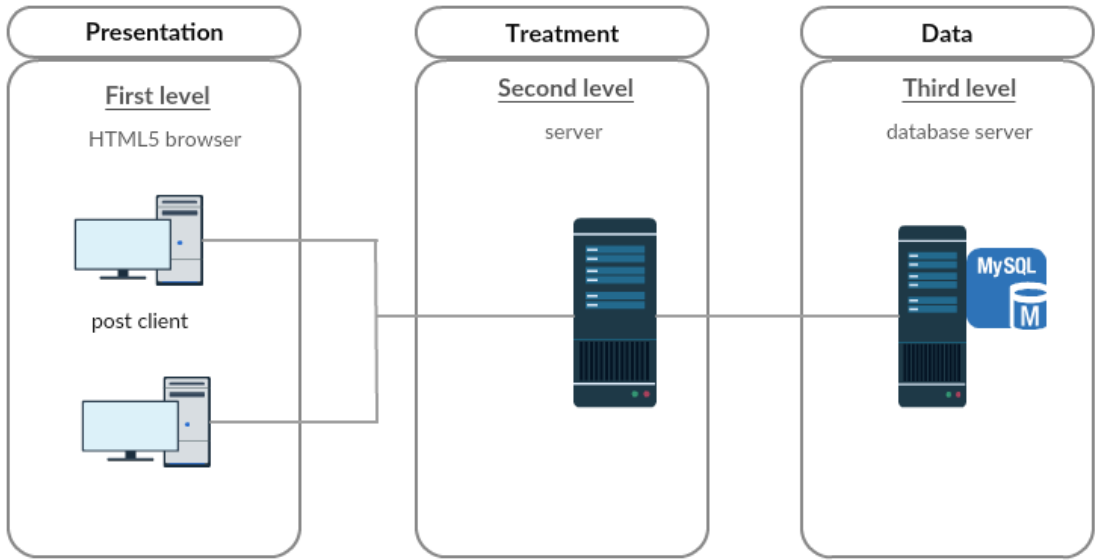


Figure 33: Distribution of application layers in a 3-tier architecture.

4.3 PHYSICAL ARCHITECTURE

Figure 34 next below shows the UML deployment diagram that illustrates the physical layout of the hardware that makes up our system and the distribution of components on those components.

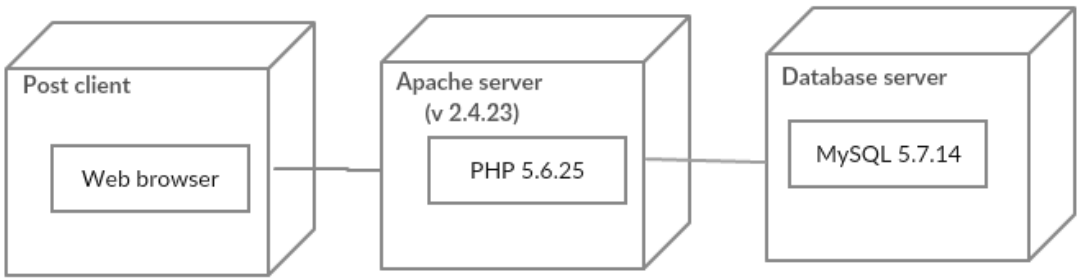


Figure 34: FindHandicraft Deployment Diagram.

4.4 THE DEVELOPMENT TOOLS

The choice of the right programming environment is very important for the development of it projects. In our case we chose a few tools that spin a large community due to its free and its powers, such as for example:

- Atom 1.25.1
- Sublime Text 3
- Wamp
 - Apache 2.4.23
 - MySQL 5.7.14
 - PHP 5.6.25
- Bootstrap 4 front-end framework
- W3Scshool CSS library
- Bootstrap Material Design library
- Firefox Developer Edition
- Creately app (uml)
- Latex (Kile + Miktex +JabRef)

1. Atom 1.25.1

Atom is a free and open-source text and source code editor for macOS, Linux, and Microsoft Windows with support for plug-ins written in Node.js, and embedded Git Control, developed by GitHub. Atom is a desktop application built using web technologies. Most of the extending packages have free software licenses and are community-built and maintained. Atom is based on Electron (formerly known as Atom Shell), a framework that enables cross-platform desktop applications using Chromium and Node.js. It is written in CoffeeScript and Less. It can also be used as an integrated development environment (IDE). Atom was released from beta, as version 1.0, on 25 June 2015. Its developers call it a "hackable text editor for the 21st Century". [9]



Figure 35: Atom logo.

2. Sublime Text 3

Sublime Text is a proprietary cross-platform source code editor with a Python application programming interface (API). It natively supports many programming languages and markup languages, and functions can be added by users with plugins, typically community-built and maintained under free-software licenses. Version 3 entered beta on 29 January 2013. At first available only for registered users who have purchased Sublime Text 2, on 28 June 2013 it became available to the general public. However, the very latest development builds still required a registration code. Sublime Text 3 was officially released on 13 September 2017.

3. Wamp

WampServer refers to a software stack for the Microsoft Windows operating system, created by Romain Bourdon and consisting of the Apache web server, OpenSSL for SSL support, MySQL database and PHP programming language.

a) Apache http Server 2.4.23

The Apache HTTP Server, colloquially called Apache, is a free and open-source cross-platform web server, released under the terms of Apache License 2.0. Apache is developed and maintained by an open community of developers under the auspices of the Apache Software Foundation. The Apache HTTP Server is cross-platform; as of 1 June 2017 92% of Apache HTTPS Server copies run on Linux distributions. Version 2.0 improved support for non-Unix operating systems such as Windows and OS/2. Old versions of Apache were ported to run on OpenVMS and NetWare.

b) MySQL 5.7.14

MySQL is an open-source relational database management system (RDBMS). Its name is a combination of "My", the name of co-founder Michael Widenius's daughter, and "SQL", the abbreviation for Structured Query Language. The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements. MySQL was owned and sponsored by a single for-profit firm, the Swedish company MySQL AB, now owned by Oracle Corporation. For proprietary use, several paid editions are available, and offer additional functionality.

c) PHP 5.6.25

PHP: Hypertext Preprocessor (or simply PHP) is a server-side scripting language designed for Web development, but also used as a general-purpose programming language. It was originally created by Rasmus Lerdorf in 1994, the PHP reference implementation is now produced by The PHP Group. PHP originally stood for Personal Home Page, but it now stands for the recursive acronym PHP: Hypertext Preprocessor. PHP belongs to the great family of C descendants, whose syntax is very close. In particular, its syntax and construction resemble those of Java and Perl languages, with the difference that PHP code can easily be mixed with HTML code within a PHP file. As in C ++, the current versions of PHP allow object-oriented programming, creating classes containing attributes and methods, class instances. Inheritance between classes also exists.

4. programming languages used

In addition to PHP we have used other programming languages.

a) CSS:

(Cascading Style Sheets: Cascading Style Sheets) is a computer language used to describe the presentation of HTML and XML documents. The standards defining CSS are published by the World Wide Web Consortium (W3C). Introduced in the mid-1990s, CSS is becoming widely used in web design and well supported by web browsers in the 2000s.

b) JavaScript:

Is a scripting language mainly used in interactive web pages. It is an object oriented to prototype language, that is to say that the bases of the language and its main interfaces are provided by objects which are not class instances, but which are each equipped with constructors allowing to generate their properties, and in particular a prototyping property that makes it possible to generate personalized heir objects. The use of JavaScript in our platform is for the purpose of manipulation, the creation of HTML code.

c) JQuery:

Is a free JavaScript library that focuses on the interaction between JavaScript (including AJAX) and HTML, and aims to simplify common JavaScript commands. The first version dates from January 2006.

4.5 FINDHANDICRAFT

The platform we have developed consists of three main areas:

- Visitors area.
- Members area (Client and Worker).
- Administrators space.

These spaces are the gateway to the platform through which visitors, members, and administrators can access the features that are allowed to them (see Table 1 [1](#), Table 2 [2](#)).

Table 1: designation of privileges.

privilege	Designation of privilege
1	Registration.
2	Manage platform
3	Access to personal space
4	Modification of personal information.
5	add a new group
6	Consult groups
7	Manage groups
8	Delete a group
9	Block a group
10	Consultation of messages.
11	Send messages
12	Add pictures
13	Delete photos
14	Consult the photos.
15	Comment on the photos
16	Consultation the personal spaces of the members.
17	Add a friend
18	Block a friend
19	Add project
20	Consultation of projects
21	Edit project
22	Delete project
23	Request worker
24	Accept request
25	Consult Home page
26	Consult category page
27	Consult handicrafts list
28	Help page

The user privileges table is as follows

Table 2: user privileges table

User	Privileges of access
Visitor	25 , 26 , 27 ,28
Member (Client)	1,3,4,5,6, 10, 11, 12,13, 14, 15, 16, 17, 18, 20, 23
Member (Worker)	1,3,4,5,6, 10, 11, 12,13, 14, 15, 16, 17, 18,19, 20, 21,22,23,24
Admin (groupes)	7, 8, 9
Admin	2

4.5.1 *Visitor Area*

It contains an introductory space for the platform, the most important functions and services, also a special section for login [37](#) and links to the registration [38](#) , lists of workers and handicrafts pages .

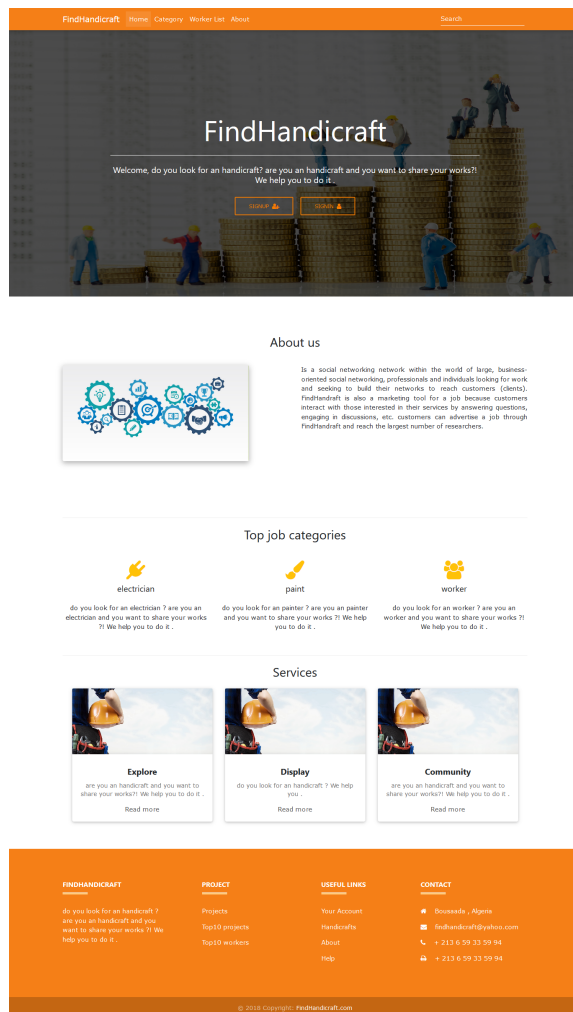


Figure 36: Home page of the visitor area.

for Log in, click on the Sign In icon, a dialog box will pop up to enter your email address and password [37](#).

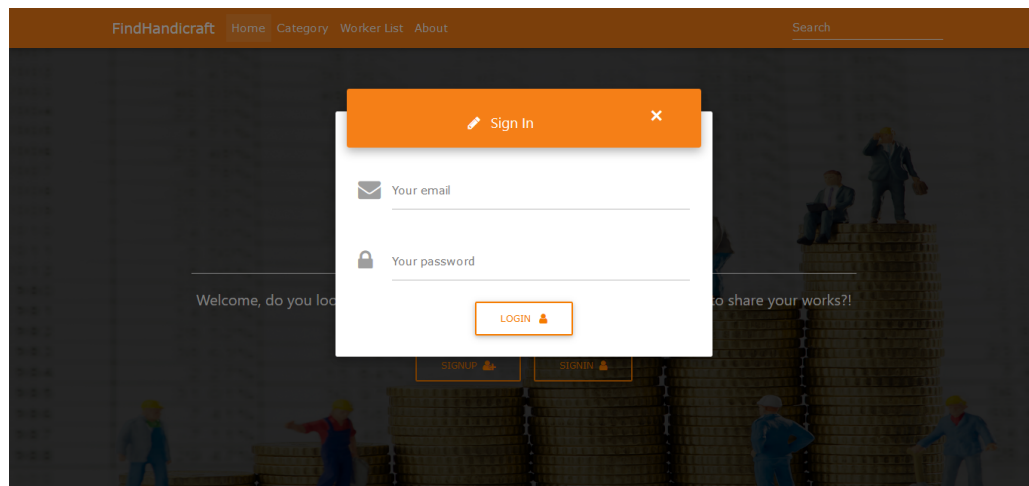


Figure 37: Login page of the visitor area

To register in platform, click on the registration icon on the home page 36, and then the system direct you to the registration page. First choose the type of registration (client or worker), and then enter your personal information by type of registration. 38

Figure 38: signup page of the visitor area

4.5.2 Members Area

The following figure 39 shows the space that members access after they authenticate.

4.5.2.1 Client

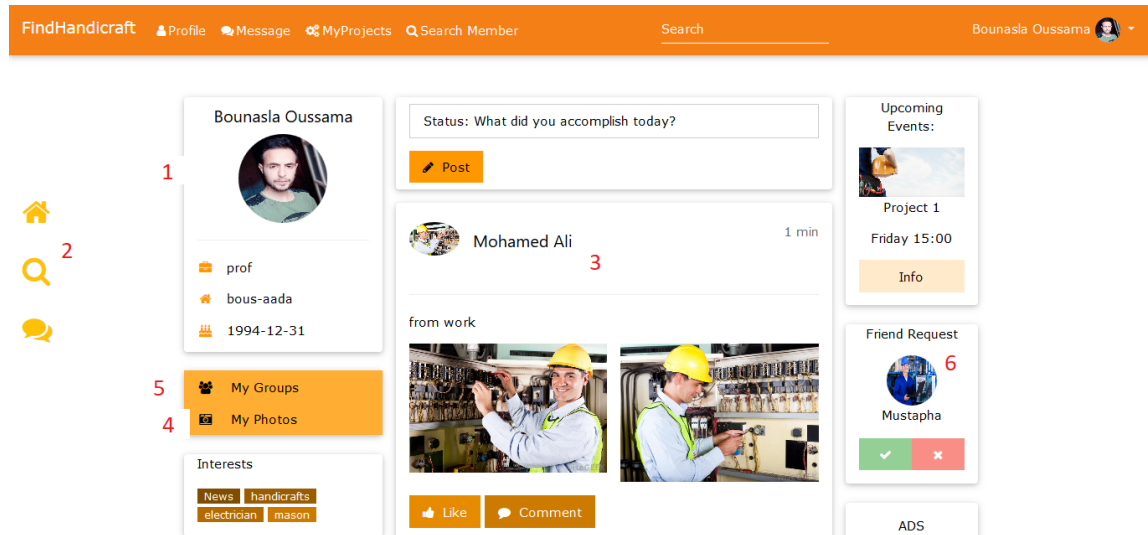
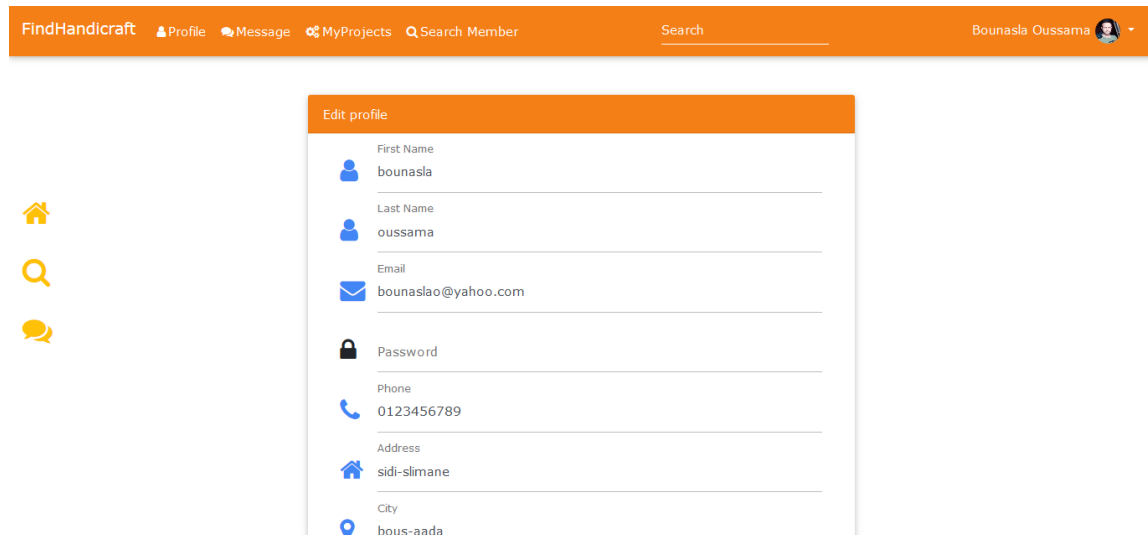


Figure 39: the main member(client) page.

1. space of information about member
2. button floating include (profile + search + message)
3. space of posts
4. list of photos this member.
5. list of groups this member.
6. space of friend requests .



FindHandicraft Profile Message MyProjects Search Member Search Bounasla Oussama

Edit profile

First Name
bounasla

Last Name
oussama

Email
bounaslao@yahoo.com

Password

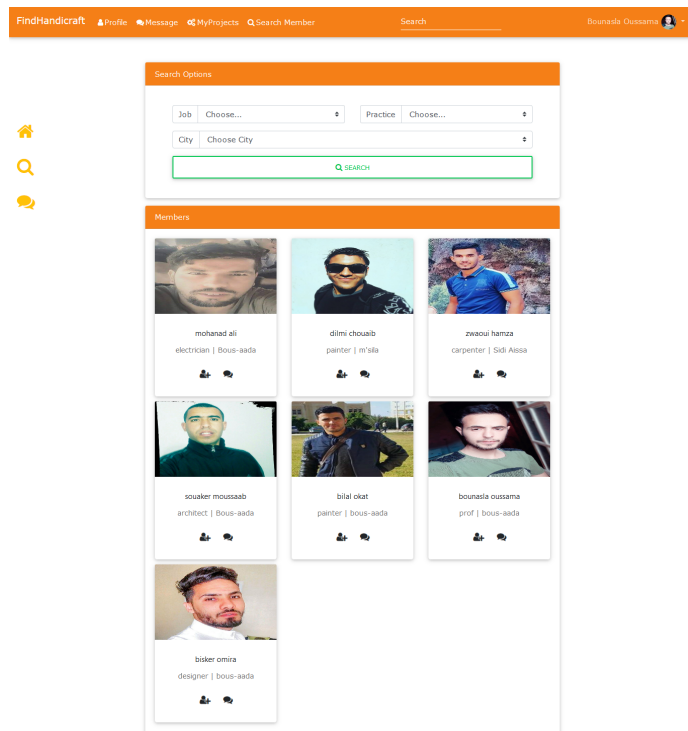
Phone
0123456789

Address
sidi-slimane

City
bous-aada

Figure 40: the edit profile page

On this page 40, the member modifies his personal information, such as a password or phone number.



FindHandicraft Profile Message MyProjects Search Member Search Bounasla Oussama

Search Options

Job Choose... Practice Choose... City Choose City

SEARCH

Members

mohamad ali
electrician | Bous-aada

dilmi chouaib
painter | m'sila

zneoui hamza
carpenter | Sidi Aissa

souaker moussaab
architect | Bous-aada

bilal okat
painter | bous-aada

bounasla oussama
prof | bous-aada

bisker omira
designer | bous-aada

Figure 41: the search members page

On the search page 41 , the member searches for any member registered on the platform, and with the help of the control panel, the search can be customized as a city selection. Or work.

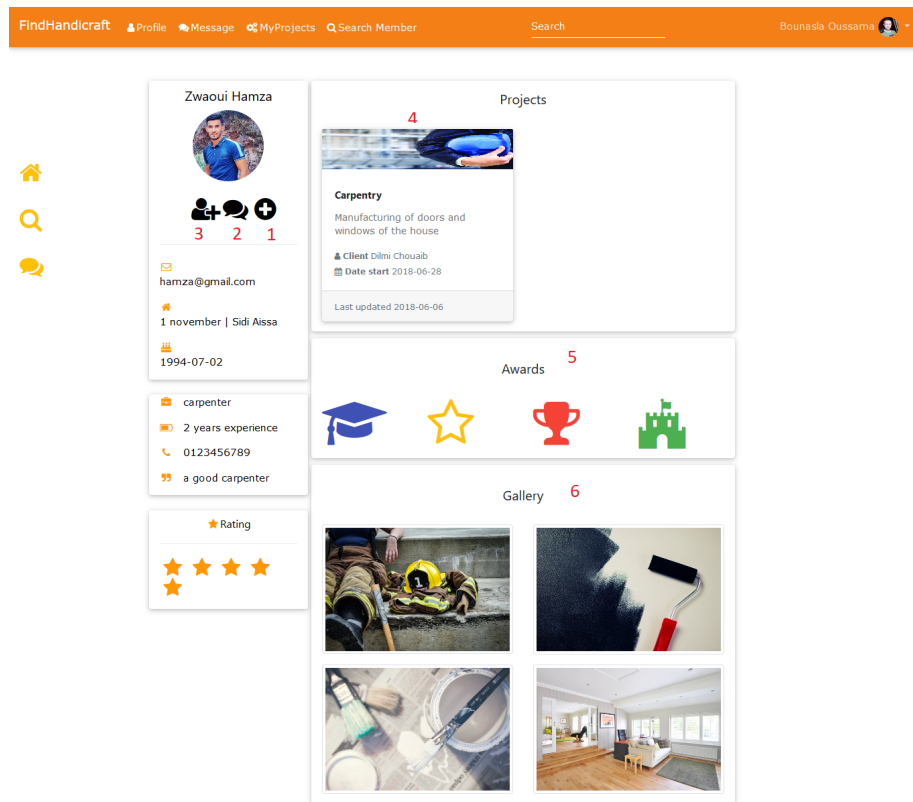


Figure 42: consult member profile page

1. icon to request this worker
2. send a message
3. send request friend
4. view projects of this worker .
5. view the awards of this worker.
6. gallery of this worker .

4.5.2.2 Worker

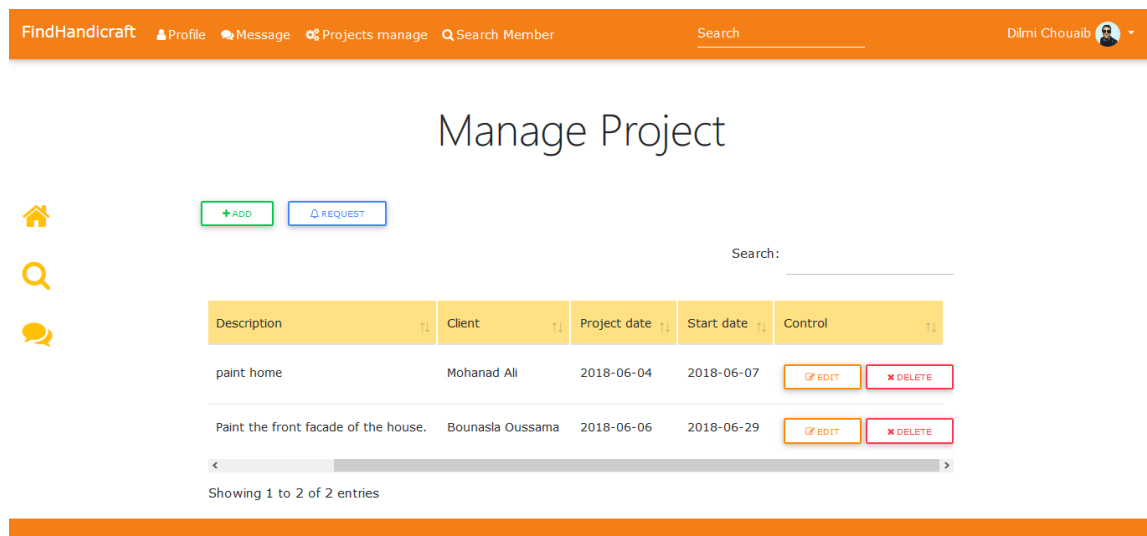


Figure 43: Manage projects page

On projects manage page 43 , it serves as a home page for projects, only worker can access .this page Help him control ,add and modify his projects.

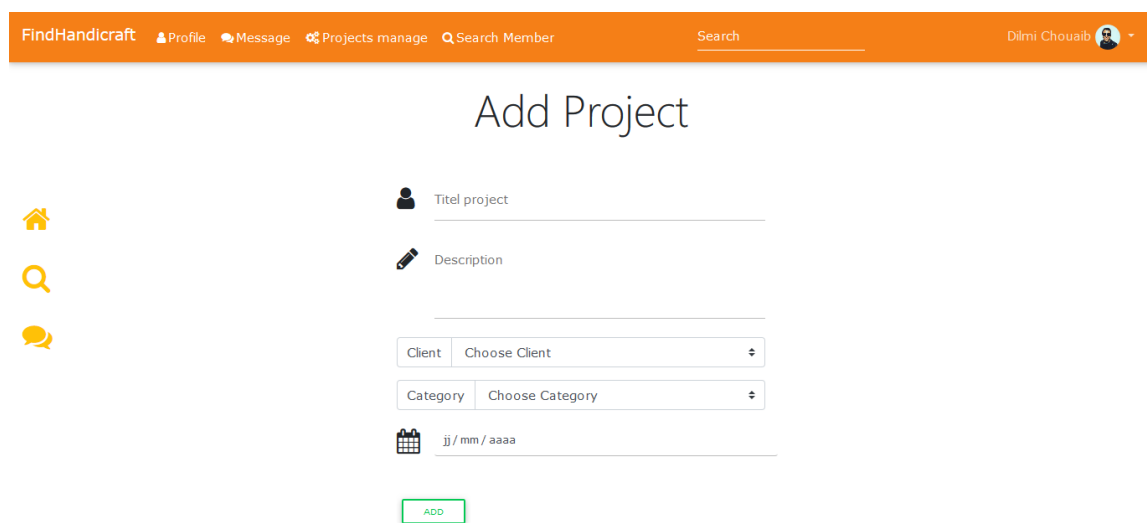


Figure 44: Add project page

In add project page 44, the worker can add a project, enters title and description of project , choose client and category of job ,finally add start date of project .

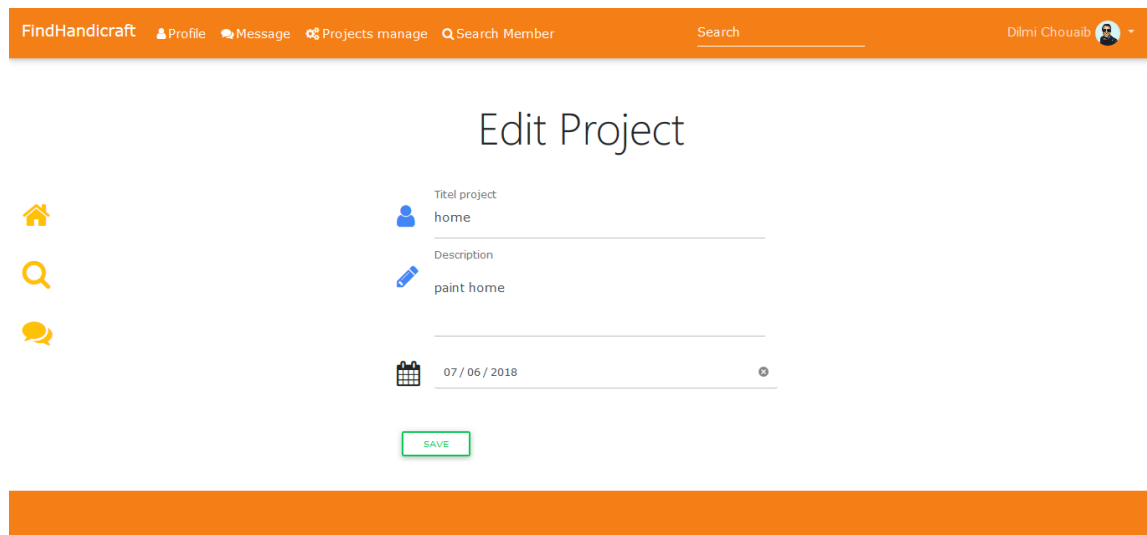
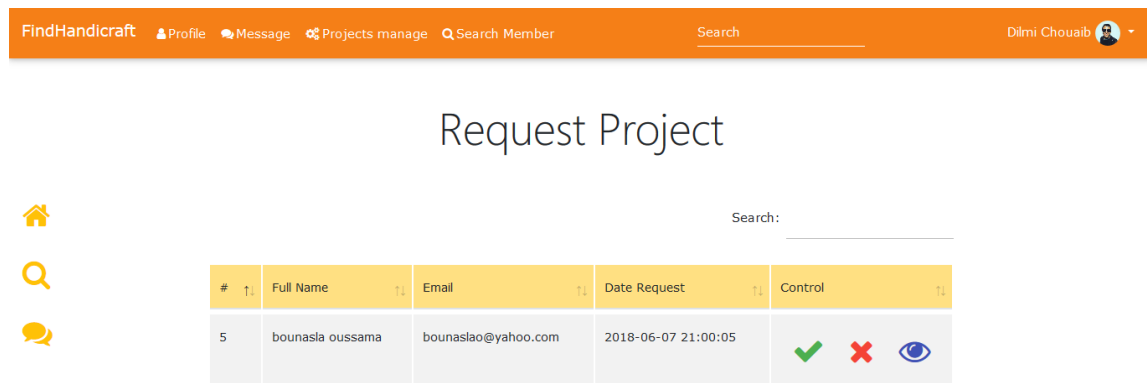


Figure 45: Edit project page

In edit project page 45, the worker can edit information of project, modify title , description and start date of project .

in request manage page 46, the worker can consult requests of project and accept or remove it .



#	Full Name	Email	Date Request	Control
5	bounasla oussama	bounasla@yahoo.com	2018-06-07 21:00:05	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Figure 46: Request project page

Part IV

GENERAL CONCLUSION

GENERAL INTRODUCTION

In our days, internet makes a big influence on our lives, through internet we can do a lot of things, it has many services, for example markets, library, online learning, freelancing... etc.

Now, there is a “virtual community” on internet, millions of people that share the same interests and that’s an important thing that we should think about it seriously when making online services.

We have tried in this project to build a professional social network to bring together workers, clients in a system to facilitate communication between worker-worker and worker-clients.

The main challenge was to; make an easy communication, a sense of sharing and exchange of knowledge between workers, in addition, our platform try to aware workers about the importance of this somewhat marketing, because the modern economics started to give a bigger place to these services.

After a deep theoretical study, a careful analysis of the needs, we developed a prototype able to answer several requirements, whose main points are summarized below:

- Ease of use: ease of navigation, between the different pages in a logical way.
- Attractiveness: the system has a very attractive interface and very ergonomic, using material design .
- Simple communication between system components by Topics, messages ... etc.
- ease of managing projects, adding, editing, changing statusâŠetc.

Nevertheless, the prototype can be developed with the time, and several perspectives of evolution and improvement are conceivable:

- make an application for the platform .
- give the opportunity to the contractors, public and private enterprises to join this service for more labor.
- transform this platform into enterprise to achieve as more as we can of objectives

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