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# Project Study

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# General Introduction

Social networking is changing the way the world is doing everything, from the way people get information to the way people communicate, and, most importantly, the way people interact. The importance and relevance of social media outlets are growing stronger with the rapid developments of technology.

In addition, we can find the professional social network which offers a variety of ways to expand your network by finding and connecting with relevant professionals in your industry. The key is to find, approach, and connect with people you already know, people you'd like to know, and people you should know. You should also post your own content, regularly showing your expertise. And LinkedIn is one of the serious, professional social networking that should not be ignored by individuals or businesses.

It is in this perspective of openness that we would like to present our project, which allows to create a social network where users help each other in their areas of training, work or skills.

To carry out this project, we will first of all, do a preliminary study where we will present our project and the problem, do a research on the study and criticism of the existing one after we will propose our solution. Then, we will present the part: Planning of the application where will specify the Analysis and Technical requirements.

# Preliminary study

## Introduction

In this chapter, our aim is to understand the essential concepts. Then we will present the existing solutions on the market and their limits in order to propose our solution. Finally, we will present the work plan of our project.

## 1.Goals

### 1.1Project context

Our project is a social network that focuses on professional networking and career development where users help each other in their areas of training, work or skills. Furthermore, our social network offers online courses to help users to confirm their skills.

This space allows them to choose the Experience or Training entry most appropriate to the project. This could be their current job, a previous role, previous university studies. It can represent any area of your expertise, work history, or skills, with the idea of further marketing of their capabilities.

### 1.2 Project objectives

The idea of our project is to develop a social network that aims to offer the opportunity for users to:

- ❖ Speed up hiring
- ❖ Research companies, interviewers and recruiters
- ❖ Make connections and network with influential people.
- ❖ Confirm their skills.
- ❖ Apply for roles using our social network
- ❖ Share their problems and help them get answers to their questions of any domain.
- ❖ Improve their knowledge and benefit from the series of courses which provide certifications.
- ❖ Interact with others by sharing their thoughts and opinions.
- ❖ Send private messages to new members to make a one-on-one connection
- ❖ Send messages to members to provide an easy way to introduce themselves and share welcoming messages

## 2.State of the art

### 2.1 Existing solution

- LinkedIn

Is the largest business-oriented networking website geared specifically towards professionals. It has over 500 million members, in over 200 countries. A professionally written LinkedIn profile allows you to create an online professional brand which can help open doors to opportunities and networks that you may not have been aware of without the help of social media

- Advantages

- It has a great job board
    - Gain exposure to Hiring Managers and Recruiters
    - User can demonstrate his knowledge, credibility and leadership expertise
    - User can gain social proof for his skills and talents

- Disadvantages

- The duration of retaking the quiz is so long (3 months)
    - Users don't have the possibility of being in direct contact with the company
    - If the user deletes his account from LinkedIn. LinkedIn's Privacy Policy states that it will remove his profile from the service within 24 hours.  
However, it doesn't mean that all his data is immediately wiped from its backup drives and his profile still can be viewed by other users.

- Stack overflow

It features questions and answers on a wide range of topics in computer programming. People, especially developers, expose and discuss the problems they are facing with about software development and some other people answer to these questions.

- Advantages

- Allow user to access to qualitative and very well curated batch of answers

- Disadvantages

- Is limited to just one area which is development

## 3.Proposed Solution

We proposed as a solution a social network under the name of "3aweni" whose the added value compared to other applications are:

- ✓ Helping users to ask and answer questions at any domain
- ✓ Keep all important documents (courses, projects...) in a private space to avoid the risk of losing them and at the same time to find all these documents in the same place
- ✓ Create groups of workers and help them organize their work (to do, doing, done)
- ✓ Users can retake the quiz without limit to confirm their skills and get a badge

## 4. Work Plan

Table 1 illustrates the breakdown of functionalities into 3 distinct phases

Phases	PHASE 1	PHASE 2	PHASE 3
GOALS	<ul style="list-style-type: none"><li>• Project study</li><li>• Requirement analysis</li><li>• Prototyping</li></ul>	<ul style="list-style-type: none"><li>• Advanced features specification</li><li>• Application design et realization</li></ul>	<ul style="list-style-type: none"><li>• Realization of advanced features, deployment and tests</li></ul>
PLANNED WORK	<ul style="list-style-type: none"><li>• Problematic definition</li><li>• State of the art</li><li>• Preliminary Feasibility Study</li><li>• Solution &amp; functional/technical requirements</li></ul>	<ul style="list-style-type: none"><li>• Data Model</li><li>• Physical architecture and technical environments</li><li>• Specification of the advanced features</li><li>• Advanced Feasibility Study (Cases studied problems and Results - development Back-end)</li><li>• Development of static user interfaces (Front-end)-&gt; depending on the project</li></ul>	<ul style="list-style-type: none"><li>• Continuation Back-End development</li><li>• Collecting and using flow from external application</li><li>• Consuming REST services by the front-end</li><li>• Development of final user interfaces (Front-end)</li><li>• Exposing REST services by the back-end Node.js</li><li>• Integration</li></ul>
TECHNICAL DELIVERABLES	<ul style="list-style-type: none"><li>• Wireframes of the solution</li></ul>	<ul style="list-style-type: none"><li>• First NodeJS components (scenarios and case studies tests)</li><li>• Static User Interfaces (Frontend)</li></ul>	<ul style="list-style-type: none"><li>• Implemented Application</li><li>• Tests results</li></ul>

**TABLE 1:WORK PLAN**

## Conclusion

Throughout this chapter, we have clarified the general context of the project by continuing it with a specific study and a critique of the existing solutions in order to find a suitable solution for this application. After that, it would be necessary in the next chapter to detail the application's planning.



# Planning the application

## Introduction

To have a clear understanding of all the characteristics of our project and to respect the criteria set by the specifications, a good analysis of the system is essential.

This chapter will be devoted to the analysis and specification of the functional and non-functional needs that we need to properly configure our application. All of this will be achieved and detailed using appropriate diagrams. Finally, we will approach the technical requirements and prototypes.

## 1.Requirement Analysis

Our project must meet the needs of the user. During this section, we will distinguish between the functional and non-functional needs that correspond to the solution we have proposed.

### 1.1 Functional requirement

Functional requirements are the constraints and conditions that must be fulfilled by the system to ensure a fair and acceptable result. These conditions define the services vices that users expect to see through the application.

The main players who interact with our web application "3aweni" are:

- **The visitor:** The person who accesses the website to perform route searches.
- **User:** Anyone who has registered on the platform to then use all features offered to it.
- **The administrator:** The one who will be responsible for updating the data on the server side, and database maintenance. This actor is independent of the solution that was given to us to design and implement. We do not go from this not consider it in the analysis and design of our work.

Table 2 illustrates the functional need of our application. We find the difference Features of our application.

Functional Requirement N°:	Function Requirement Description
FR1	User Should Be Able To Put Personal Informations To Create An Account
FR2	User Should Be Able To Recover His Password With Email
FR3	User Should Be Able To Publish Any Post
FR4	User Should Be Able To Create a Story
FR5	User Should Be Able To react at any post
FR6	User Should Be Able To put a commentary to any post
FR7	User Should Be Able To send requests
FR8	User Should Be Able To Apply For a Job
FR9	User Should Be Able To Chat With Friends
FR10	User Should Be Able To Create A Group
FR11	User Should Be Able To Share A Project
FR12	User Should Be Able To Upload Data To His Private Cloud
FR13	User Should Be Able To Look For A Solution To His Problem
FR14	User Should Be Able To Validate His Skills After passing A Quiz
FR15	User Should Be Able To Subscribe For a Course
FR16	User Should Be Able To Make An Interview With Company
FR17	User Should Be Able To Make Video and Voice Calls
FR18	Admin Should Be Able To Check Reports and Ban a User
FR19	Admin should Be Able To Confirm the request of the trainer
FR20	Admin Should Be Able To Delete Posts or Comments
FR21	Admin Should Be Able To add categories for job and problem posts

**TABLE 2:FUNCTIONAL REQUIREMENTS**

## 1.2 Functional non-requirement

Although they are not related to the job, non-functional needs are everything also essential and ensure a better quality of the solution. Our application must ensure:

- **Security:** The tool must be secure and controlled by user access rights.
- **Maintainability:** Maintainability and scalability are priorities. The code will be readable, commented, divided according to pages (interfaces) and according to the tasks addressed.
- **Ergonomics:** Interfaces should be simple and user-friendly.
- **Robustness & Availability:** The project remains stable, available and able to provide consistently reliable results under extreme operating conditions over time.

### 1.3 use case

The present use case diagram defines the functionalities available to the user by our application

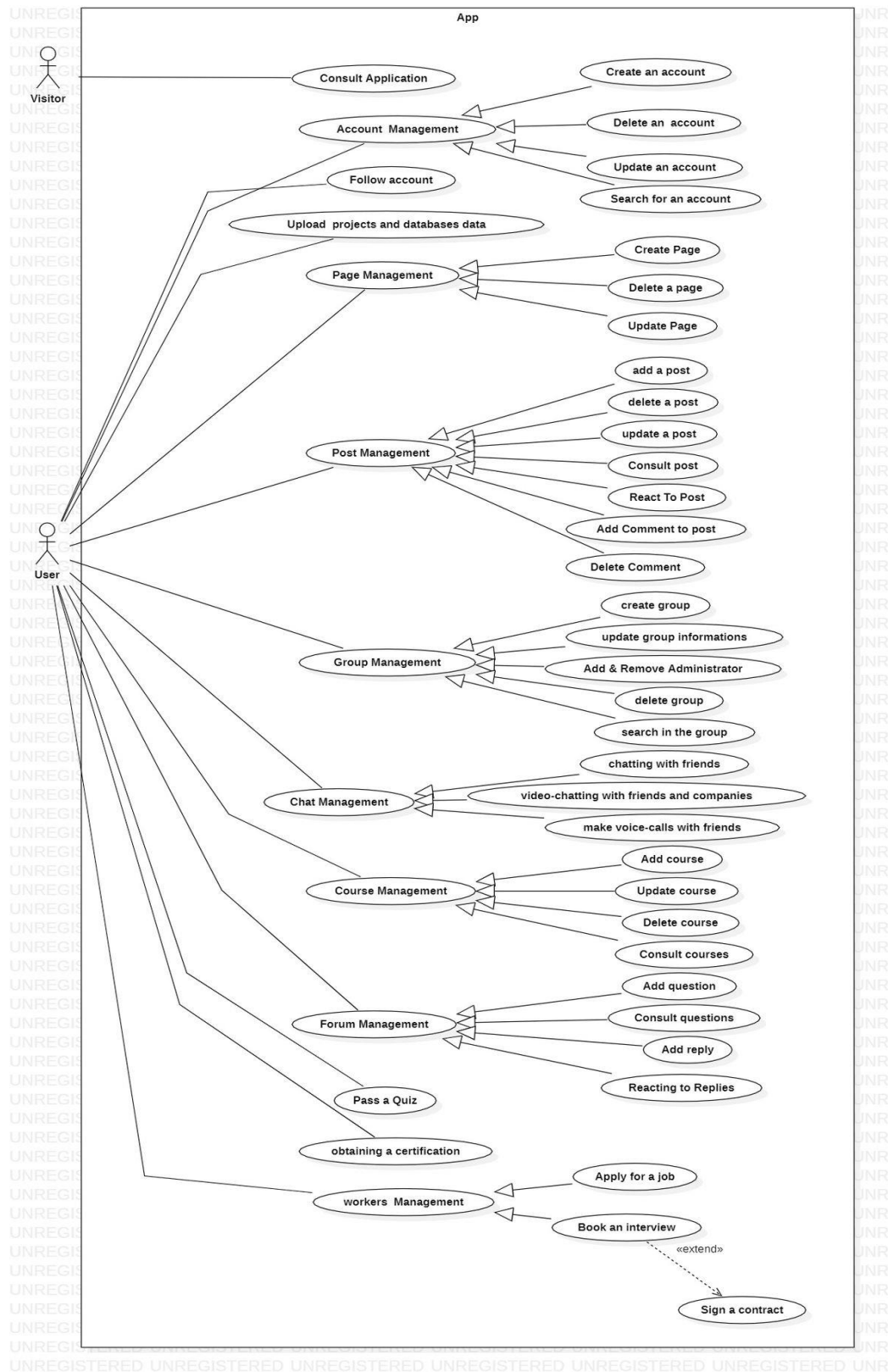
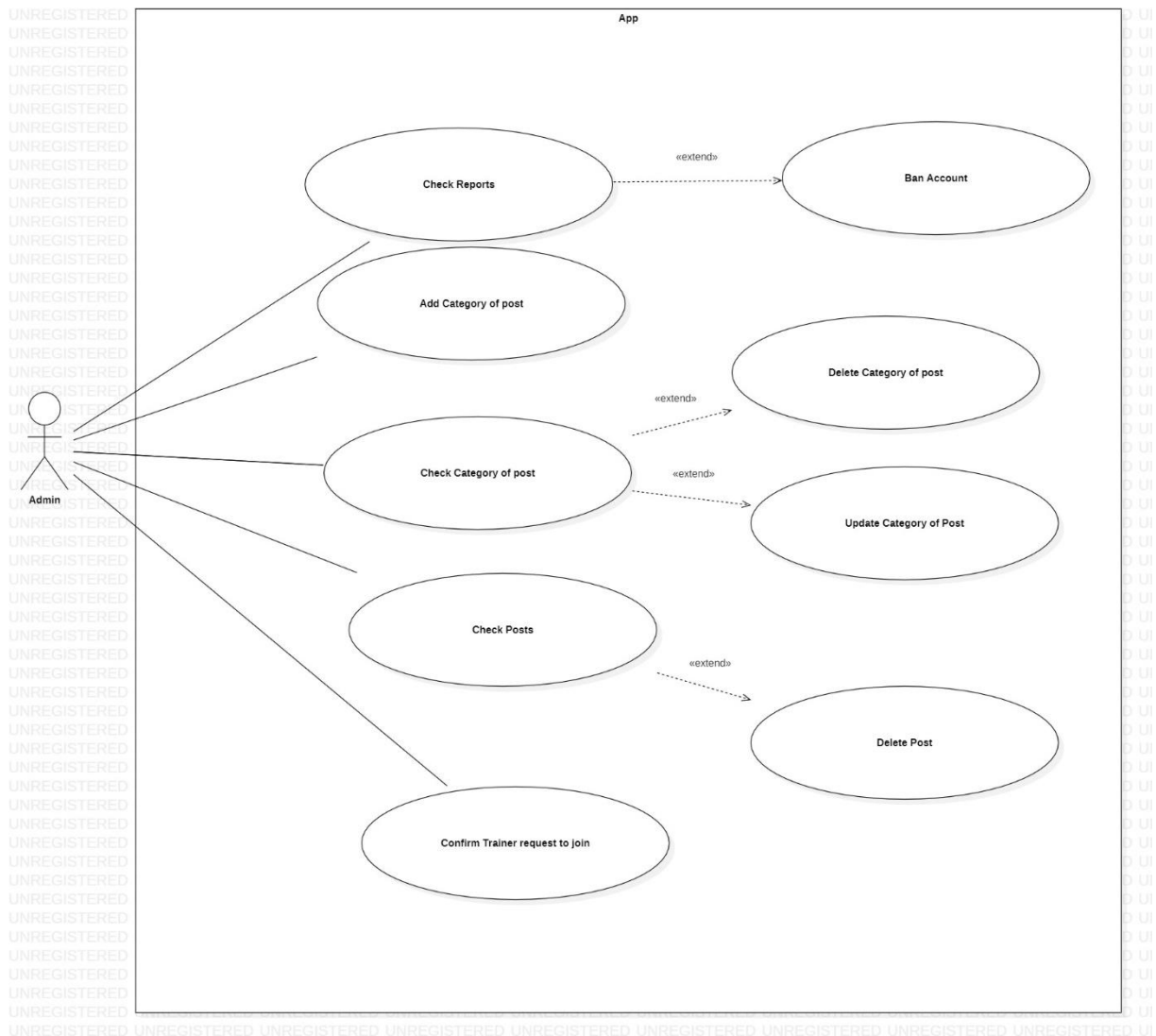


FIGURE 1:USE CASE(USER)



**FIGURE 2:USE CASE(ADMIN)**

## 2. Technical requirement

### 2.1. Technical architecture

Our application is a full stack Js following the traditional 3-tier architectural pattern. The architecture of our application is based on a typical MVC model.

Our Client tier (View) will be written in JavaScript, HTML, and CSS, using ReactJS as the framework. This level of the architecture is what the user will interact with to access the features of our application.

The Business Logic Tier (Controller) will be written using NodeJS and ExpressJS, and this tier represents the Application Server that will act as a bridge of communication for the Client Tier and Database Tier. This tier will serve HTML pages to the user's device and accept HTTP requests from the user and follow with the appropriate response.

Our Database Tier (Model) will be hosting MongoDB. This is where we will store all of the crucial data our application needs to function.

Below, a diagram to distinguish the different components of the 3-tier architecture.

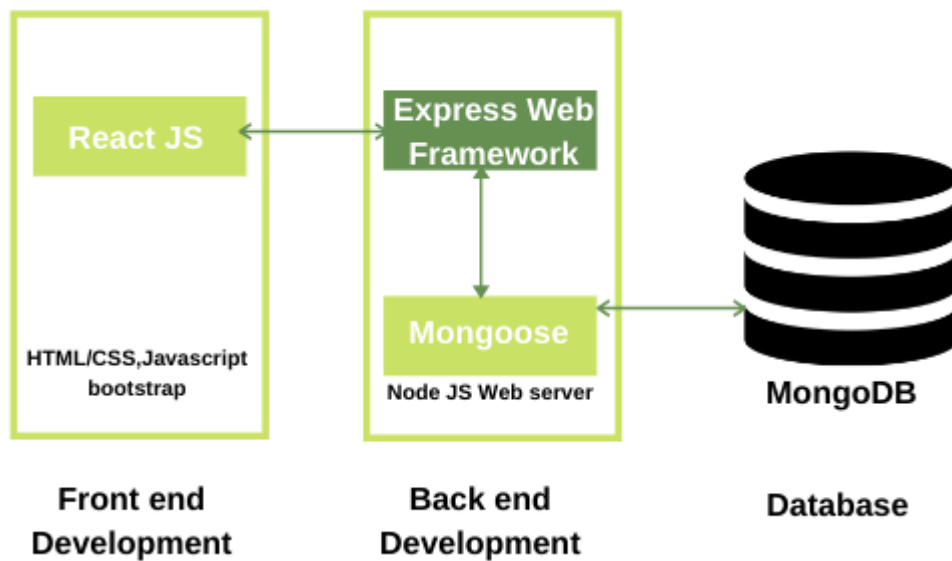


FIGURE 3:PHYSICAL ARCHITECTURE

## 2.2 Languages and frameworks

In this section we will write the software and hardware development tools with which this project was carried out.

### 2.2.1 Languages

- JavaScript

Is a programming language commonly used in web development. It was originally developed by Netscape as a means to add dynamic and interactive elements to websites.



FIGURE 4 :JAVASCRIPT LOGO

### 2.2.1 Frameworks

- React Js:

Is used for the front-end web application which is a JavaScript library created by Facebook and a user interface library. Instead of relying on templates to automate the creation of repetitive HTML or DOM (Document Object Model) elements, React uses a full-featured programming language (JavaScript) to construct repetitive or conditional DOM elements.



FIGURE 5:REACTJS LOGO

- **Node.Js**

It was initially built for Google Chrome, and later open-sourced by Google in 2008. It is built on Chrome's V8 JavaScript engine. It's designed to build scalable network applications, and can execute JavaScript code outside of a browser.

Node.js works without an enclosing HTML page, instead using its own module system based on CommonJS, to put together multiple JavaScript files.



FIGURE 6: NODEJS LOGO

- **Express.Js**

Is a back-end web application framework for Node.js. It is used for designing and building web applications quickly and easily. With the help of Express.js, you can easily build different kinds of web applications in a short period of time.



FIGURE 7: EXPRESSJS LOGO

## 2.3. Software Tools

- **Visual Studio code**

Is one of the most popular and one of the best tools for web development, it is a free open-source text editor by Microsoft that combines the simplicity of a source code editor with powerful developer tooling, like IntelliSense code completion and debugging.



FIGURE 8: VISUAL STUDIO LOGO

- **Postman**

Is a collaboration platform for API development. Postman's features simplify each step of building an API and streamline collaboration so you can create better APIs—faster.



**FIGURE 9: POSTMAN LOGO**

- **Git**

Is a tool that we can use to save the different versions of our code, with git we can roll back to the previous version so we can fix the bug, it also has the concept of branching which makes it very easy for us to work on the same code base at the same time and then merge everything back together.



**FIGURE 10: GIT LOGO**

- **GitKraken**

Is a desktop client, it allows us to easily see what features are being worked on and by whom, we also have our main area which displays all our commits and branches.



**FIGURE 11: GITKRAKEN LOGO**

- **MongoDB Compass**

Is the GUI for MongoDB. Compass allows us to analyze and understand the contents of our data without formal knowledge of MongoDB query syntax.



**mongoDB**

**FIGURE 12: MONGODB LOGO**



## 3. Prototyping

### 3.1 logo

To be effective, a logo must have a style that matches our identity and the content of our website. Colors should also be carefully chosen. Giving our decisions, enough time and strategic thinking will benefit us in the long run. That is why, for the logo, we have chosen the symbol of a professional user and "3aweni" as the name of the website which will help him, in all areas, to realize his desire to know the news and to have more opportunities to apply to find a job and solutions to their problems. In addition, our logo is based on two main colors which are: cyan blue and orange. It is known for its powerful observation skills and energy that also helps users to predict and identify the possible road that will lead them to success.



FIGURE 13: OUR LOGO

### 3.2 user interface

The different models are essential, they allow us to have a first visibility on the rendering of our application as well as to clarify the feasibility of some of our features. They also make it possible to structure and organize the routing of our interfaces.

- The visitor is able to have an account by filling out the following form to be a user of the application

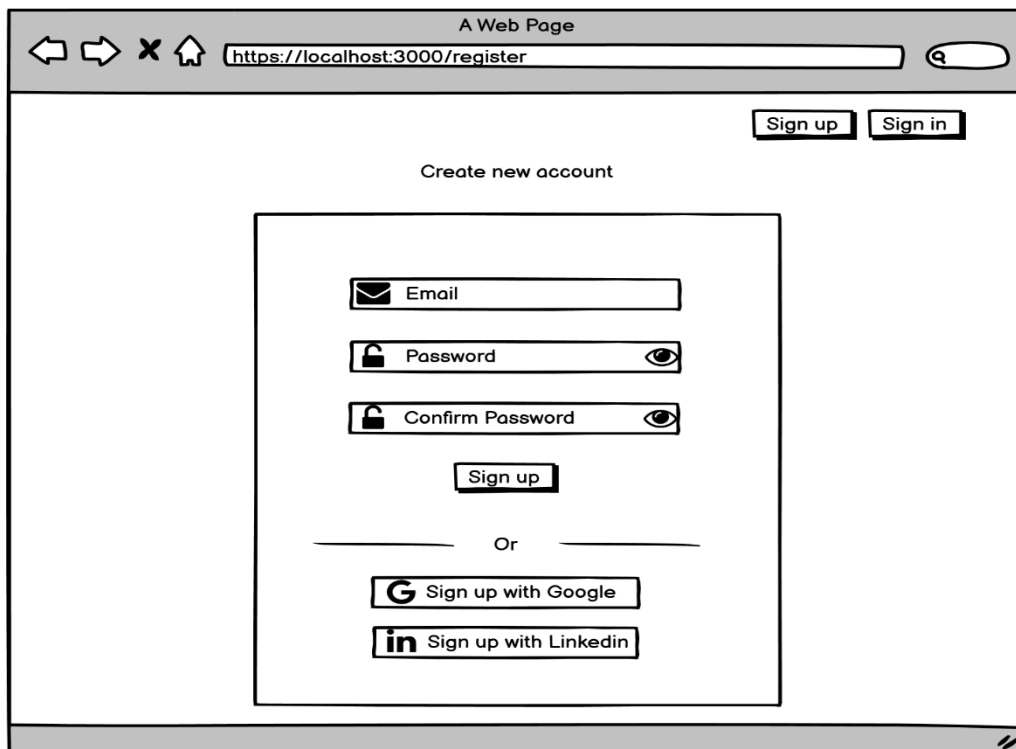


FIGURE 14: REGISTER

- The user can consult the profiles of other users and follow them

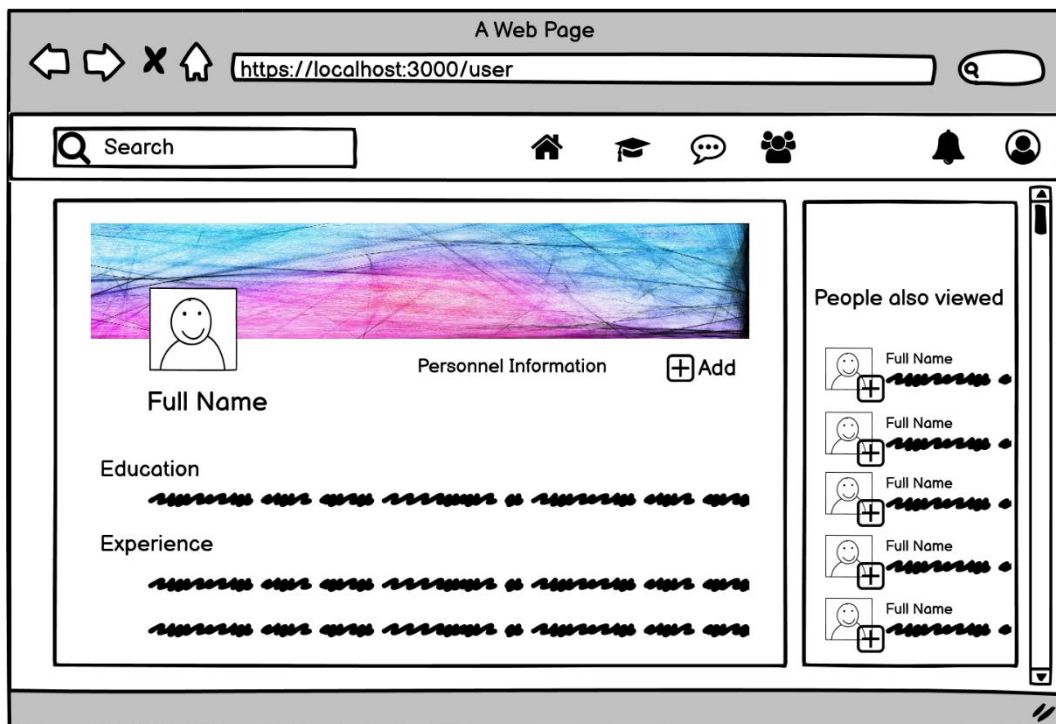


FIGURE 15:CONSULTING A USER'S ACCOUNT

- Each user has the possibility to add a new post to express themselves and apply for jobs or internships

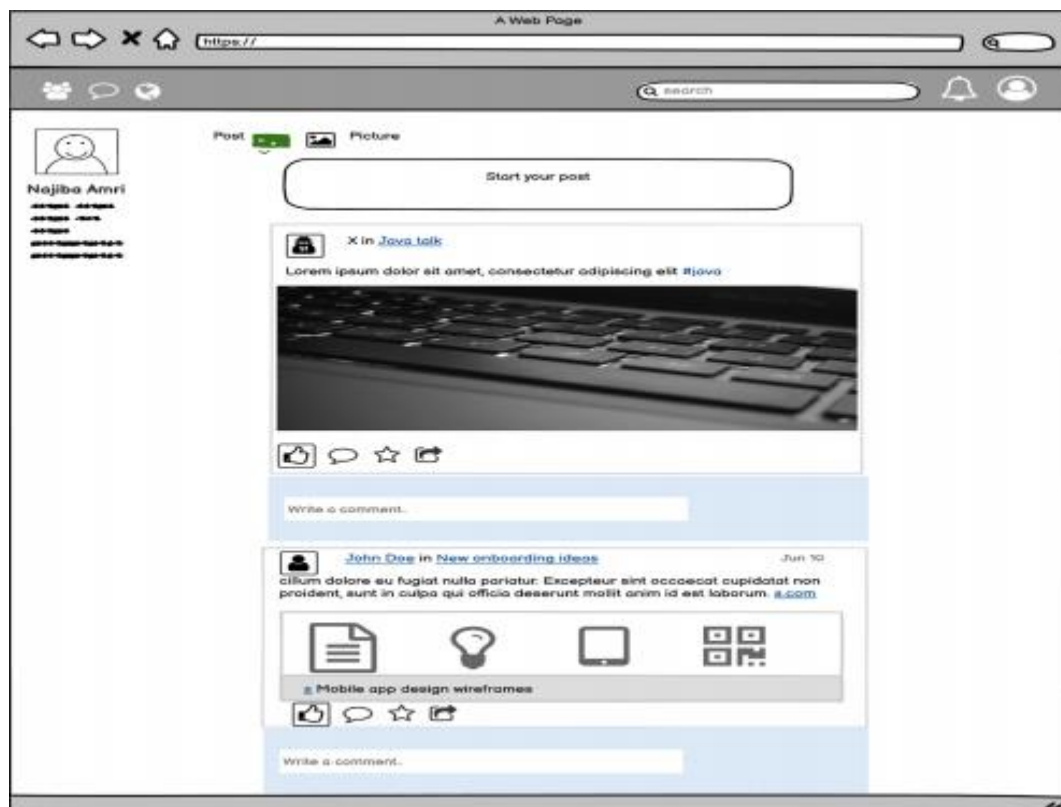


FIGURE 16:ADDING AND CONSULTATION OF POSTS

- It is a space for each user to post their problems in order to find solutions thanks to the others who will respond with a comment

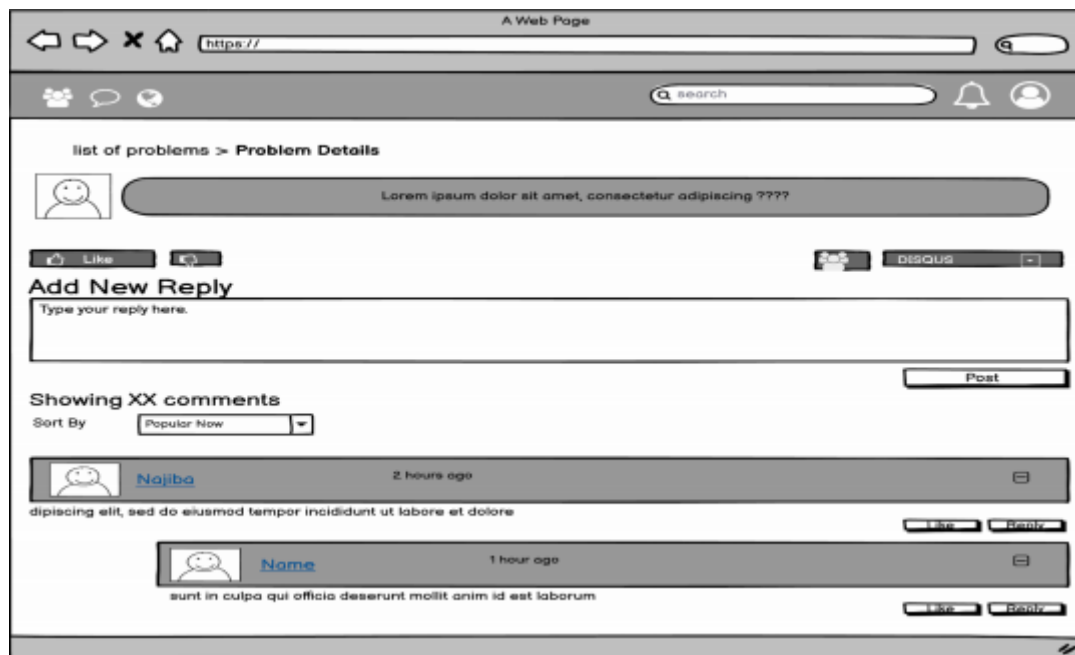


FIGURE 17: POSTING PROBLEMS

- The user can consult the course space where he can see the complete list and filter according to the level, language and category.

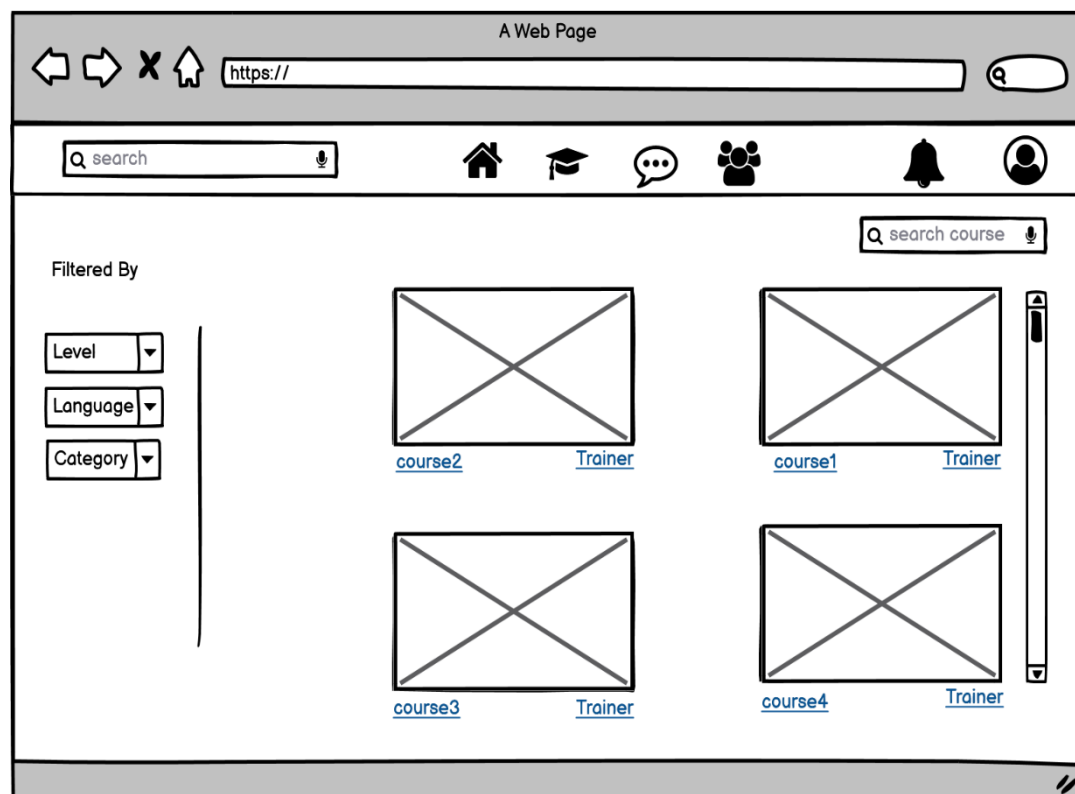


FIGURE 18: CONSULT COURSES

- The user has the possibility to be a trainer by filling out this form to add a course and wait for the validation of the administrator

The image shows a web browser window with the title 'A Web Page'. The address bar contains 'https://'. Below the address bar is a search bar with the text 'search'. The main content area contains a form titled 'Add Course'. The form has the following fields:

- Add Course**
  - Name:
  - Category:
  - Language:
  - Skills:
  - Level:
  - Photo:
- Add Module**
  - Name:
  - Description:
- Sub-Module**
  - Name:
  - Duration:
- Content**
  -

FIGURE 19:ADD COURSE

- The user can chat with other users also he has the possibility to send a message to a page to ask for something for example

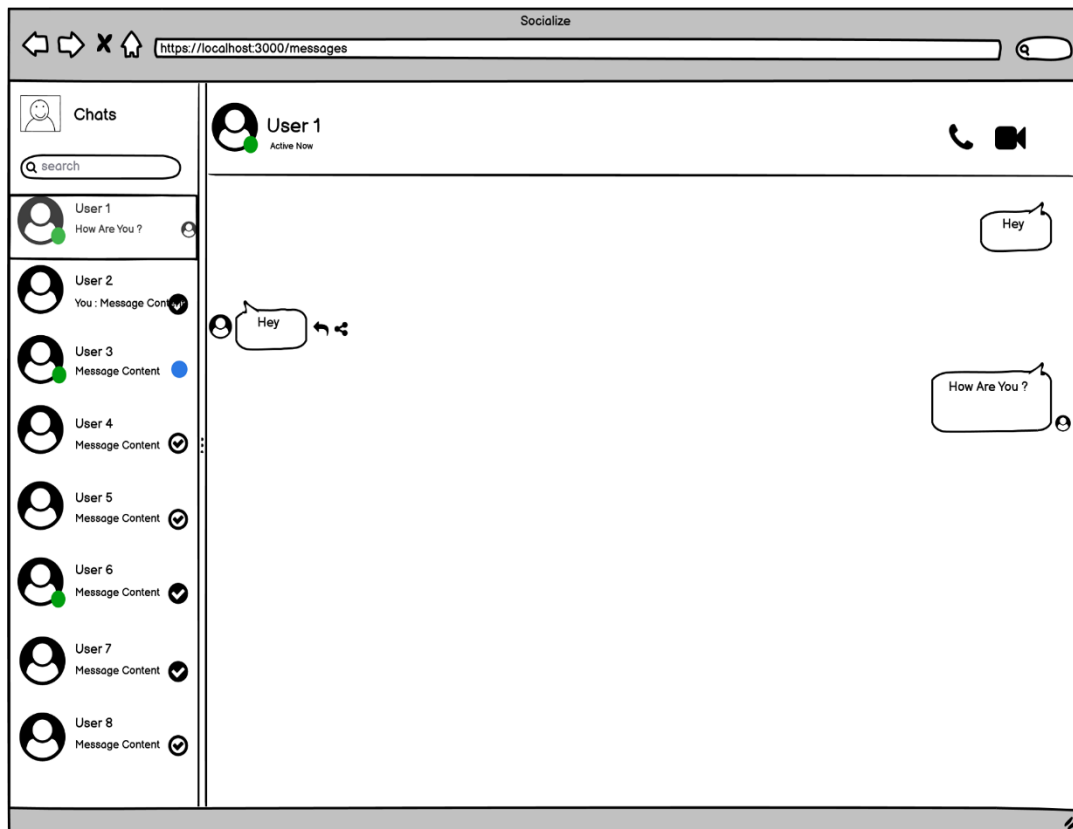


FIGURE 20: CHATting WITH SOMEONE

- The user is able to make a group of works on this space which allows him to organize the work

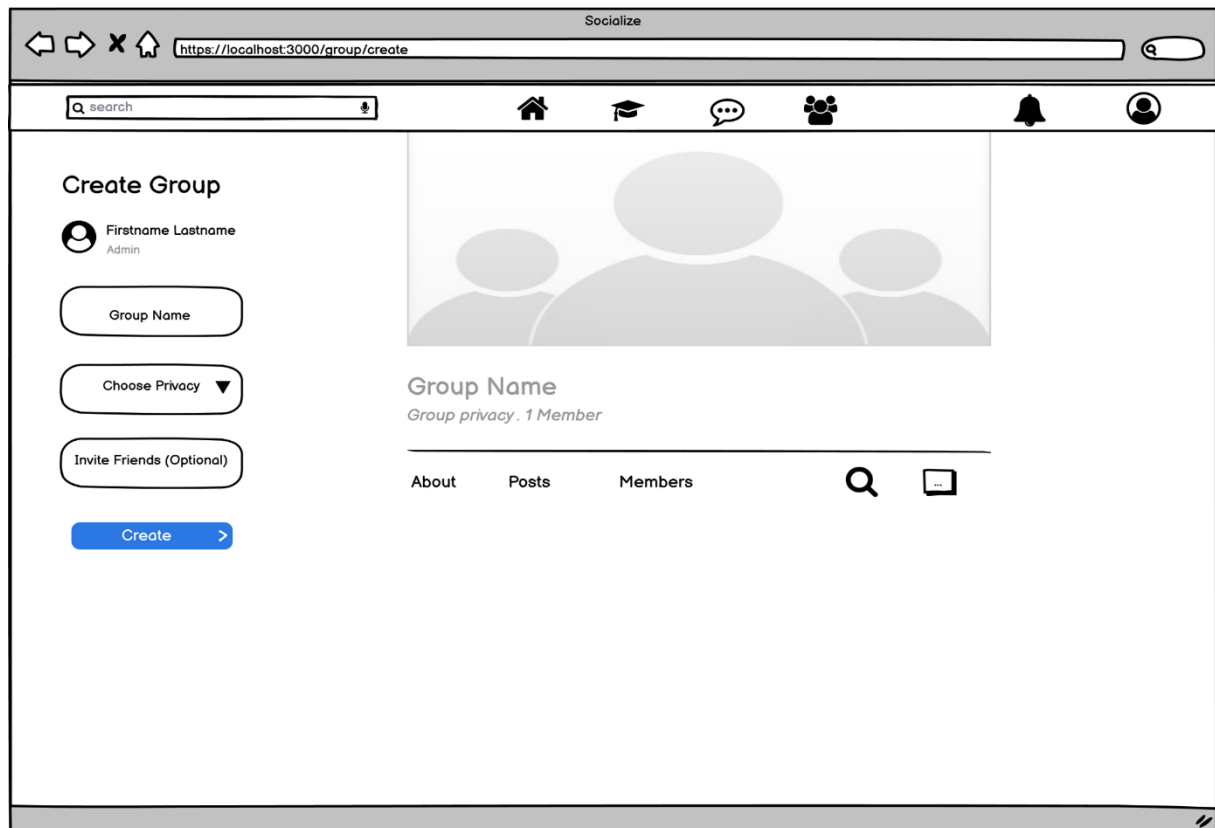


FIGURE 21:ADDING A GROUP

- The list of users who have been selected and graded depending on the CV and the interview note.

Home Profile Problems Logout

User Accept

search

Nom	Prenom	Mail	Lien Interview	Date	Etat de l'interview	Note CV (/5)	Note Final (/30)	Action
Overghui	Aymen	Aymen.ouerghui@esprit.tn	meet.com	21/02/2021	<input checked="" type="checkbox"/>	4	7	
Hajji	chekib	chekib@esprit.tn	meet.com	25/02/2021	<input type="checkbox"/>	3	Pas encore	Saisir Note
Amri	Najiba	najiba@esprit.Tn	meet.com	22/02/2021	<input checked="" type="checkbox"/>	3	6	

Faire

FIGURE 22:THE LIST OF ACCEPTED USERS

- The user will be selected depending on his skills and the CV to work in a project.

Home Profile Problems Logout

Nom : Hajji  
Prenom : Chakib  
Mail : chekib@esprit.tn  
Note CV : 3/ 5

Affecter Note Sur (/5) 3

Effectuer

FIGURE 23:GIVING NOTES FOR EVERY ACCEPTED USER

## Conclusion

This chapter has enabled us to determine the actors of our applications as well as the different functional and non-functional needs but also the overall diagrams, prototypes and description of the functionality requirements allowed us to identify the different functionalities in detail.



# General Conclusion

To carry out such important work we did a lot of research in this first phase in order to understand our needs and have a detailed idea of the existing. We are also aware that this site may evolve in the future, and therefore it is really necessary at the developmental level to do a precise and clear work in the following phases in order to facilitate the work whether it is an administrator or a simple user of the site. During the realization of this project, we will not only directly apply new knowledge acquired in classes such as different programming languages and project management, but also, we will improve our communication.