StandardLists=false

Acknowledgments

First of all, before I start presenting my report, I would like to express my extreme gratitude and thanks to those who have supported me, encouraged me and inspired me from near and far.

For this reason,I want to thank all of our professors for delivering such a great quality of education for the past three years, especially during the pandemic, they always find a way to keep us motivated and pushing us forward.

Also, I would like to thank the company team for facilitating my integration and providing an amazing experience and atmosphere since day one and to all my dear friends who have made my life brighter by just being in it..

And of course, without forgetting the most important and precious people in our lives which are our families and friends for providing love and support since the beginning and never lost faith in us no matter what.

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General Introduction

The internship is an essential part of our training. It is a contact direct that allows the student to live the reality of professional life and their organizational problem.

Starting from this participation, I had experienced practical lessons, also adapt and improve my theoretical knowledge.

In this sense, and thanks to my interest in computer science, I have chosen to complete my development internship at HCV . The structure of my report is going to be like this:

- The first chapter is devoted to the presentation of the host organization
- The second chapter focus on the UI/UX design
- The third chapter presents the requirements specification and the modelling of the proposed solution
- The fourth chapter focuses on the creation of interfaces and the UI/UX design.

Chapter 1

Project Environment

Contents

1.1 Introduction

In this chapter, I will begin with a presentation of the company HCV. Then I will determine by the objectives to be achieved of this project. Thus, I am interested in the market research and the study of the existing and I propose possible solutions.

1.2 General overview:

1.2.1 Presentation of the host organization

Figure 1.1: company's logo

Human Capital Value (HCV) is a management consulting company that helps national and international organizations in the voluntary, public and private sectors (private companies, NGOs, foundations, etc.) to refine their strategies, evaluate their projects and teams, to equip themselves with managerial tools and to evolve their organization to better adapt to their environment.

HCV provides various services:

- Recruitment of Managers and Executives.
- Project evaluation.
- Change management.
- Coaching and Training.
- Research and reports.

1.2.2 Company's organizational chart

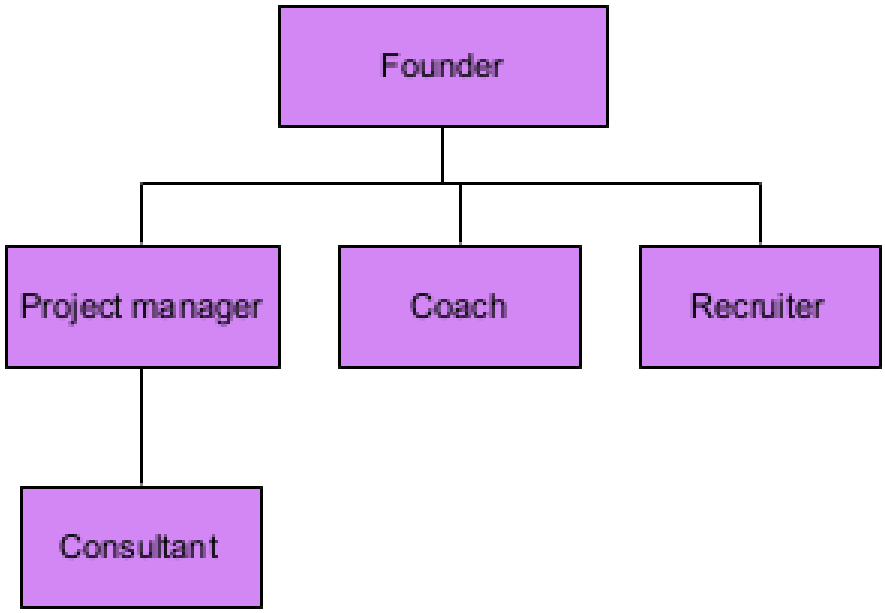

Figure 1.2: Company's chart

1.3 Introduce the subject of the internship

1.3.1 Scope and purpose of the internship

This internship is a development course that aims to invest in a project carried out in a professional environment, recommend solutions, design and realize the proposed solution .

My internship was with HCV. The subject is entitled « Upgrade the website's UI (user interface) /UI (user experience) and add an admin side website».

1.4 Preliminary study of the project

1.4.1 The Market Research

The Market Research is a very important step to have a better understanding of the current system.

The Internet provides a perfect market place wherein companies have to have a website to build brand awareness, improving customer support and showcasing work in which those websites have to be updated, preferably have a great modern design and be user-friendly.

1.4.2 Criticism of the existing

Most of the companies' e-portfolio are static which leads to many problems (outdated, maintenance difficulties, time/energy consumption to be updated...) .

1.4.3 Proposed solution

The e-portfolio of the company should have an admin-side website connected to a cloud database for its significant advantage over traditional databases by allowing those with critical data resource needs to scale demand without worrying about availability and security .

In order to solve these problems I proposed to develop 2 website applications:

- An e-portfolio, a dynamic website application which has public data of the company with good UI/UX design.
- An admin-side website application in which the admin can manage public data of the company. and users(employees) can manage their work steps by creating, modifying, listing and grouping it.

1.5 Conclusion

In this chapter, I have presented the company, the market research and the chosen. In the following chapter I will describe the different requirements and functions of this project.

Chapter 2

UI/UX design

Contents

2.1 Introduction

In this chapter, I introduce the UI and UX design and their involvement in the digital world and the difference between them both.

2.2 What are UX and UI design

UX design refers to the term "user experience design", while UI stands for "user interface design". Both elements are crucial to a product and work closely together. But despite their professional relationship, the roles themselves are quite different, referring to very different aspects of the product development process and the design discipline.

Before we consider the key differences between UX and UI, let's first define what each term means individually.

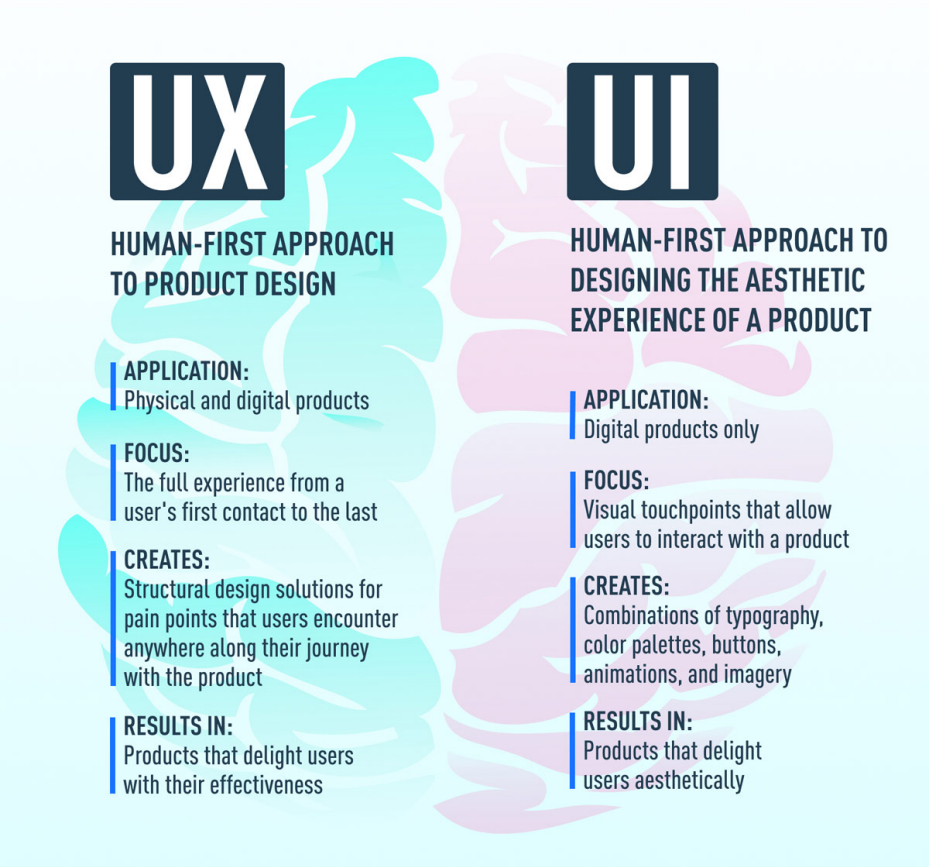

Figure 2.1: Difference between UX and UI

2.2.1 What is user experience (UX) design

User experience design is a human-first way of designing products.

"User experience encompasses all aspects of the end-user's interaction with the company, its services, and its products."
– Don Norman, Cognitive Scientist and User Experience Architect

UX and the digital world

Essentially, UX applies to anything that can be experienced—be it a website, a coffee machine, or a visit to the supermarket. The "user experience" part refers to the interaction between the user and a product or service. User experience design, then, considers all the different elements that shape this experience.

A UX designer thinks about how the experience makes the user feel, and how easy it is for the user to accomplish their desired tasks. They also observe and conduct task analyses to see how users actually complete tasks in a user flow.

For example: How easy is the checkout process when shopping online? How easy is it for you to grip that vegetable peeler?

The ultimate purpose of UX design is to create easy, efficient, relevant, and all-round pleasant experiences for the user.

User experience design is the process of developing and improving the quality of interaction between a user and all facets of a company.
it is NOT about **visuals** it focuses on the **overall feel of the experience**.

2.2.2 What is user interface (UI) design

Despite it being an older and more practiced field, the question of "What is user interface design?" is difficult to answer because of its broad variety of misinterpretations. While user experience is a conglomeration of tasks focused on the optimization of a product for effective and enjoyable use, user interface design is its complement; the look and feel, the presentation and interactivity of a product.

But like UX, it is easily and often confused by the industries that employ

UI designers—to the extent that different job posts will often refer to the profession as completely different things. Despite it being an older and more practiced field, the question of "What is user interface design?" is difficult to answer because of its broad variety of misinterpretations. While user experience is a conglomeration of tasks focused on the optimization of a product for effective and enjoyable use, user interface design is its complement; the look and feel, the presentation and interactivity of a product.

UI and the digital world

In relation to websites and apps, UI design considers the look, feel, and interactivity of the product. It's all about making sure that the user interface of a product is as intuitive as possible, and that means carefully considering each and every visual, interactive element the user might encounter.

A UI designer will think about icons and buttons, typography and color schemes, spacing, imagery, and responsive design.

Like user experience design, user interface design is a multi-faceted and challenging role. It is responsible for the transference of a product's development, research, content and layout into an **attractive, guiding and responsive experience for users**.

2.3 What's the difference between UX and UI design

UX design is all about the overall feel of the experience, while **UI design** is all about how the product's interfaces look and function.

A **UX designer** considers the user's entire journey to solve a particular problem; what steps do they take? What tasks do they need to complete? How straightforward is the experience?

It's important to understand that UX and UI do go hand-in-hand; you can't have one without the other. However, you don't need to possess UI design skills to be a UX designer, and vice versa—UX and UI constitute separate roles with separate processes and tasks!

With the skeleton of the product mapped out, the UI designer steps in to bring it to life. The UI designer considers all the visual aspects of the user's journey, including all the individual screens and touchpoints that the user might

encounter; think tapping a button, scrolling down a page or swiping through an image gallery.

While the UX designer maps out the journey, the UI designer focuses on all the details that make this journey possible. That's not to say that UI design is all about looks; UI designers have a huge impact on whether or not a product is accessible and inclusive.

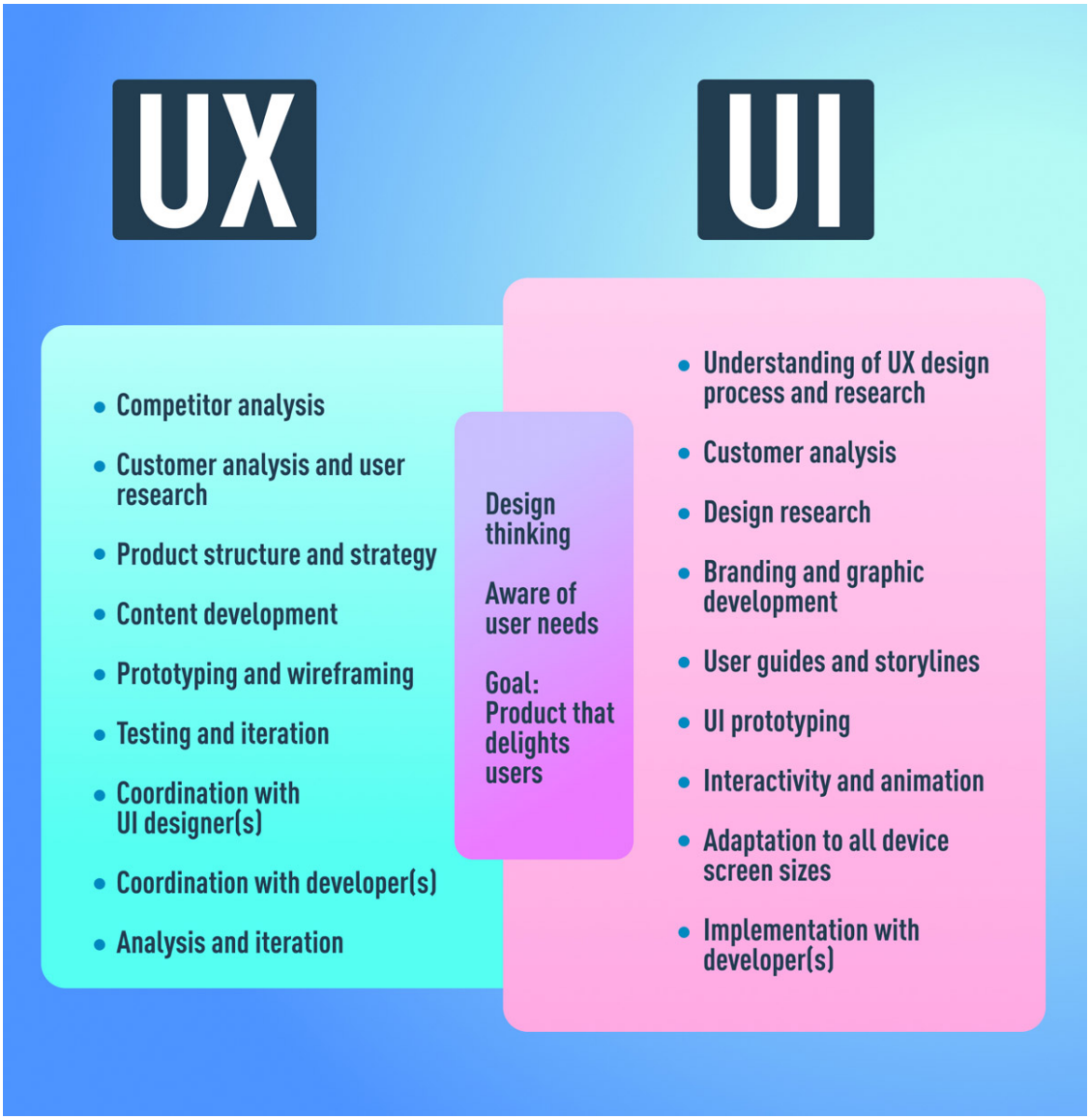

Figure 2.2: Tasks and responsibilities of UX vs UI designers

2.4 Conclusion

During this chapter I specified the meaning of both UI and UX design and its involvement in the digital world and how it is important and vital field. I have explained the difference between them and how they both are independent on each other.

Chapter 3

Requirements Specifications

Contents

3.1 Introduction

In this chapter, I will design the objectives of our application as well as the different specifications which are composed by two categories: functional needs and non-functional needs which are represented by use-cases diagrams.

3.2 Requirements Specifications

The analysis of this subject allowed us to identify the various requirements that our operation must meet. These linked requirements are classified into two orders functional and non-functional.

3.2.1 The functional requirements

1. Administrator

➤ Managing employees

- Add a new employee
- Edit employee's data
- Delete employee
- Viewing the List of employees

➤ Managing customers

- Add a new customer
- Edit customer's data
- Delete customer
- Viewing the List of customers

➤ Managing the clients

- Add a new client
- Edit client's data
- Delete client
- Viewing the List of clients

2. Employee
   - ➤ Add a new event
   - ➤ Edit event
   - ➤ Delete event
   - ➤ Viewing the Lists of event
   - ➤ Organise events

3.2.2 The non-functional requirements

These are the requirements that characterize the system in terms of performance, type of material or type of design.

In the following, we describe the different non-functional needs of our system:

1. **Availability :**

   it is necessary that the application remains always in service to interact with the users at any given moment.

2. **Ergonomics :**

   Ergonomics is the use of a simple and easy to understand user interface, so that navigating the application is not ambiguous to any user.

3. **Interoperability :**

   The user doesn't need to install anything to be able to use this application, just a web browser, in addition it is multiplatform.

4. **Reusability :**

   The application must provide the ability to modify and reuse the code.

3.3 Conception

3.3.1 Use-case diagramme

This diagram, illustrated by the figure below shows that:

- Manage employee: administrator can manage employee.
- Manage customer: administrator can manage customer.
- Manage client: administrator can manage client.
- Manage event: employee can manage event.

3.3.1.1 Global use case diagram

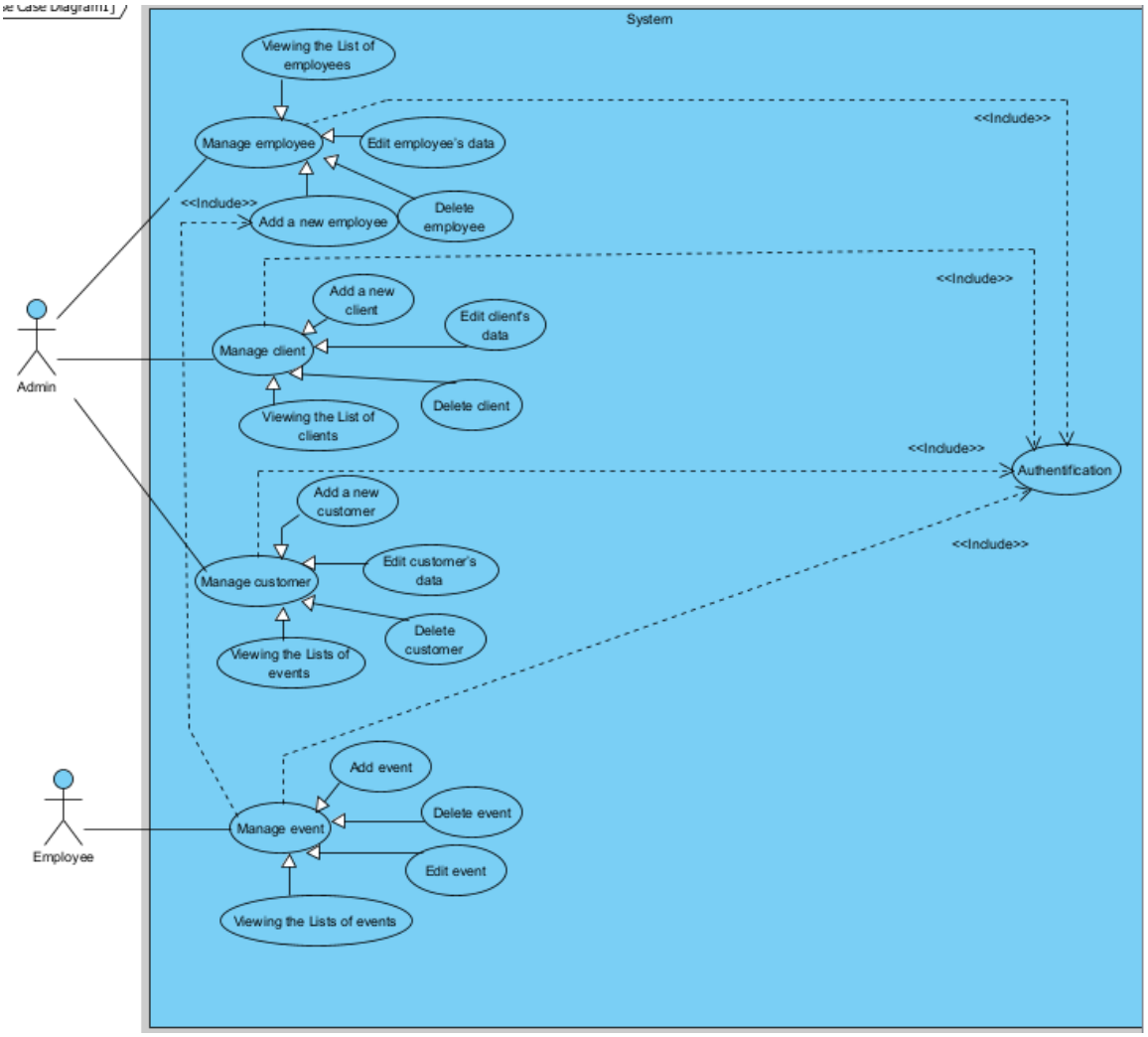

Figure 3.1: Global use case diagram

3.3.2 The dynamic modeling

The dynamic model is used to express and model the behaviour of the system over time. It is concerned with the temporal changes and the different states the object passes through during its lifetime.

3.3.2.1 The sequence Diagrams

Sequence diagrams are used to display the interactions between users, objects and entities within the system. It provides a sequential map of message passing between objects over time. I will illustrate below a few of our project's sequence diagrams :

3.3.2.1.1 Add customer

This diagram shows the scenario that occurs when adding a new customer.

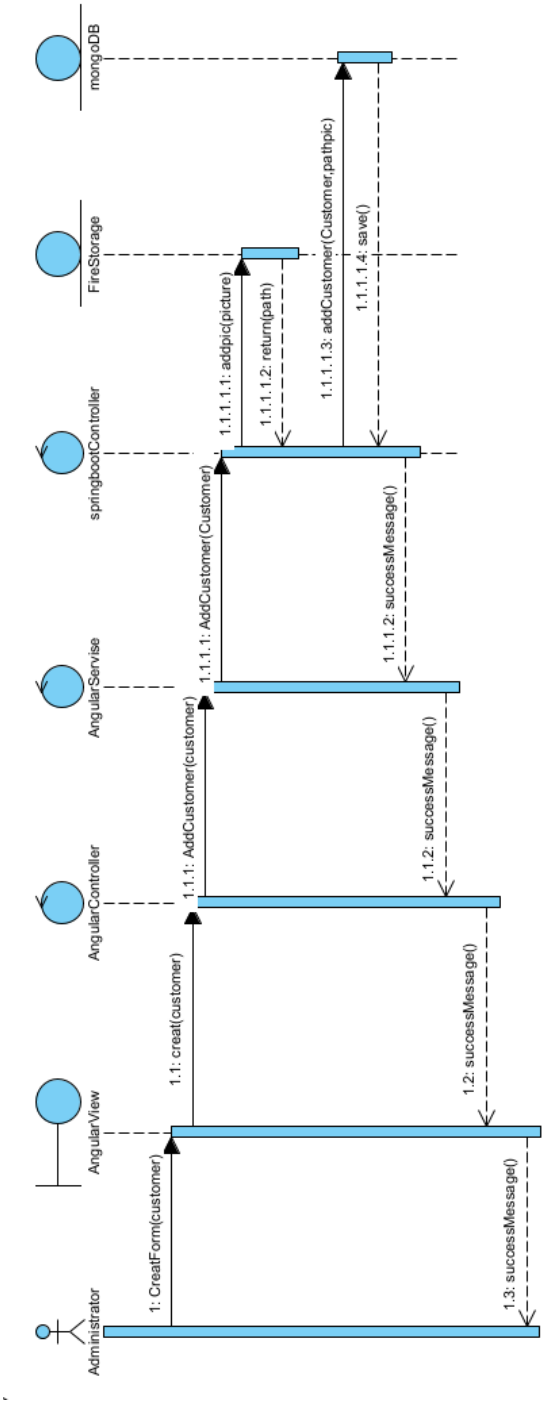

Figure 3.2: Sequence diagram "Add customer"

3.3.2.1.2 Delete client

This diagram shows the scenario that occurs when deleting a client

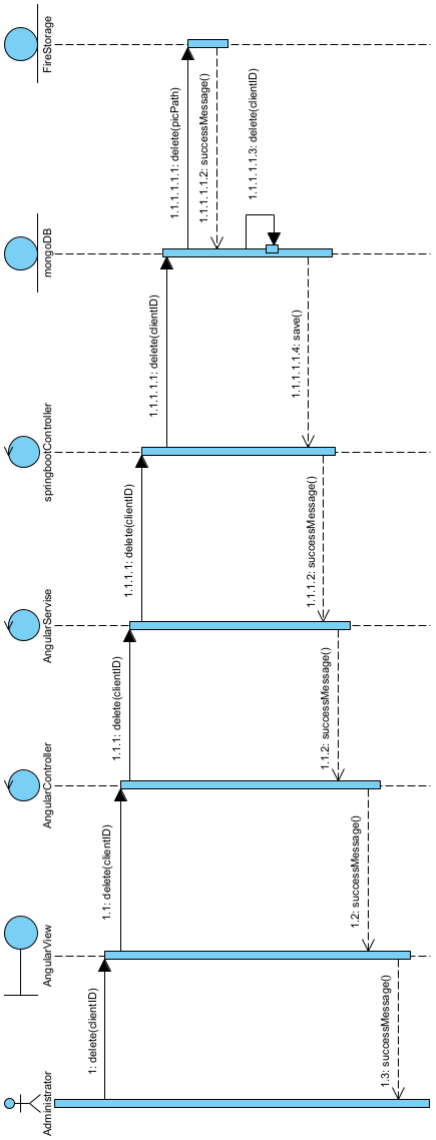

Figure 3.3: Sequence diagram "Delete client"

3.3.3 The class diagram

Class diagram :

The class diagram represents the classes that make up the system and the associations between them. It generally expresses the static structure of a system, in terms of class and relations between these classes. Just as a class describes a set of objects, an association describes a set of links; objects are instances of classes and links are instances of relationships. [1]

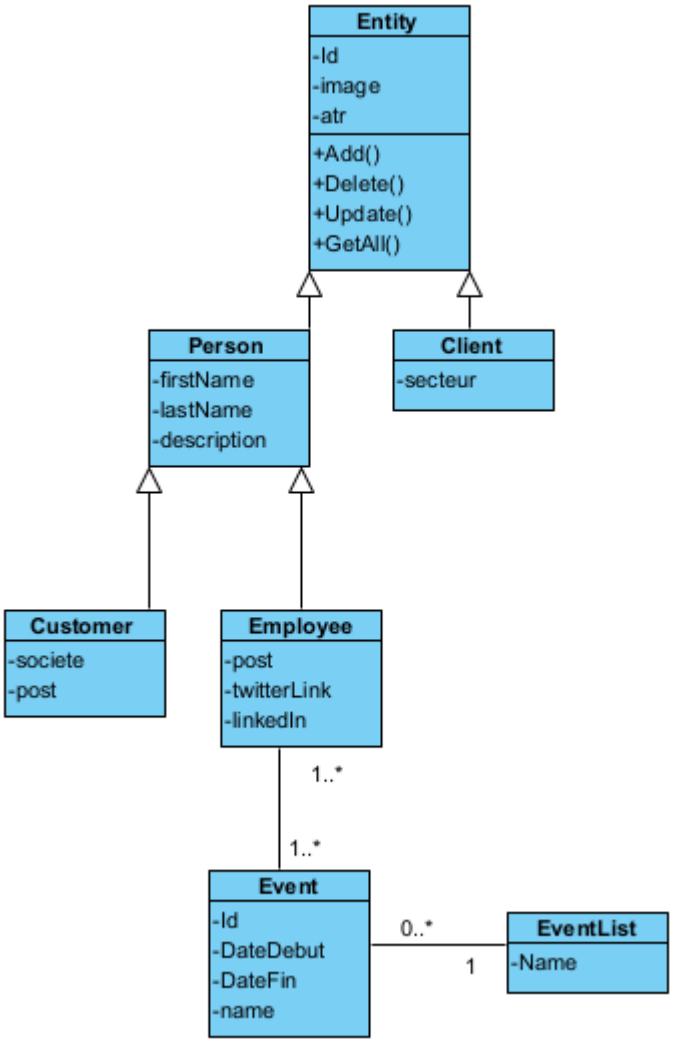

Figure 3.4: class diagram

3.3.4 The deployment diagram

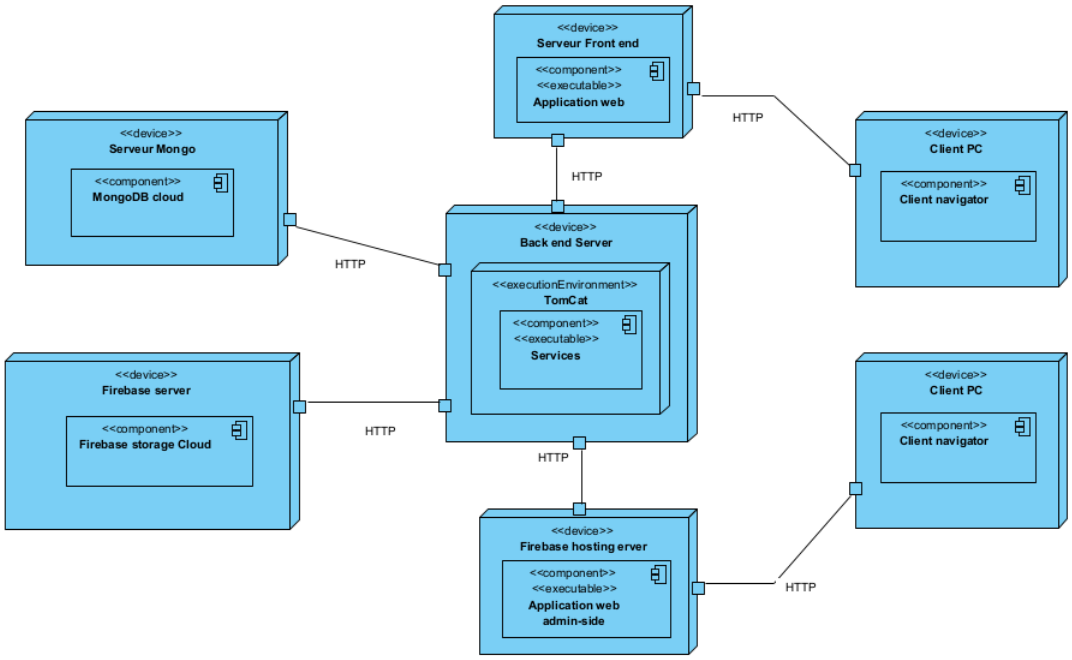

Figure 3.5: Deployment diagram

3.4 Conclusion

During this chapter I specified the functional and non-functional requirements of our system and presented the different use cases.

Chapter 4

Réalisation et tests

Contents

4.1 Introduction

Now that I have determined the different project requirements, during this chapter I will illustrate how the system will work by providing some interfaces

4.2 Development environment

4.2.1 Environnement logiciel :

During the development of this application, I used the following software tools:

- **VisualStudioCode**

Visual Studio Code is a source code editor that can be used with a variety of programming languages, including Java, JavaScript, Go, Node. js and C++. It is based on the Electron frame, which is used to develop Web Node applications. [2]

- **XamppServer**

XAMPP is a free and open-source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages..[3]

- **MongoDB**

MongoDB is a source-available cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with optional schemas. MongoDB is developed by MongoDB Inc. and licensed under the Server Side Public Licens.[4]

- **FireStore**

Cloud Firestore is a cloud-hosted, NoSQL database that your Apple, Android, and web apps can access directly via native SDKs.[5]

4.2.2 Technologie utilisée

- **HTML5**

  (HyperText Markup Language): it first appeared in 1991 when the Web was launched. Its role is to manage and organize content. So it is in HTML that you will write what must be displayed on the page: text, links, images... For example, you will say, "This is my title, this is my menu, here is the main text of the page, here is an image to display, etc." [6]

- **CSS3**

(Cascading Style Sheets, aussi appelées Feuilles de style) : le rôle du CSS est de gérer l'apparence de la page web (agencement, positionnement, décoration, couleurs, taille du texte. . .). Ce langage est venu compléter le HTML en 1996.[7]

- **ANGULAR**

Angular is a TypeScript-based free and open-source web application framework led by the Angular Team at Google and by a community of individuals and corporations. Angular is a complete rewrite from the same team that built AngularJS[8]

- **SPRINGBOOT**

Spring Boot is a Java-based open source framework used to create a microphone service. It is developed by Pivotal Team. Spring Boot used to create Stand-alone, production-ready spring applications.[9]

- **POSTMAN**

Postman allows to build and execute HTTP requests, to store them in a history in order to replay them, but especially to organize them in Collections.[10]

- **Angular Material**

Angular Material · High quality. Internationalized and accessible components for everyone. · Versatile. Provide tools that help developers build their own custom components with common interaction patterns.

Built by the Angular team to integrate seamlessly with Angular.[11]

- **sweet alert 2**

Heroku is a platform as a service (PaaS) that enables developers to build, run, and operate applications entirely in the cloud. [12]

- **heroku**

A beautiful, responsive, customizable, accessible (WAI-ARIA) replacement for JavaScript's popup boxes and most importantly Zero dependencies. [13]

4.2.3 The hardware environment

To develop this application I used a machine, configured as follows:

Marque	MSI GL62MVR 3
Processeur	i5 7éme generation
RAM	12GB
Carte Graphique	Nvidea Geforce 1060TI
Disque Dur	512GO
Système D'exploitation	WINDOWS 10 professionnel

Table 4.1: The hardware environment

4.3 Application description

4.3.1 interface presentation

4.3.1.1 Old service interface

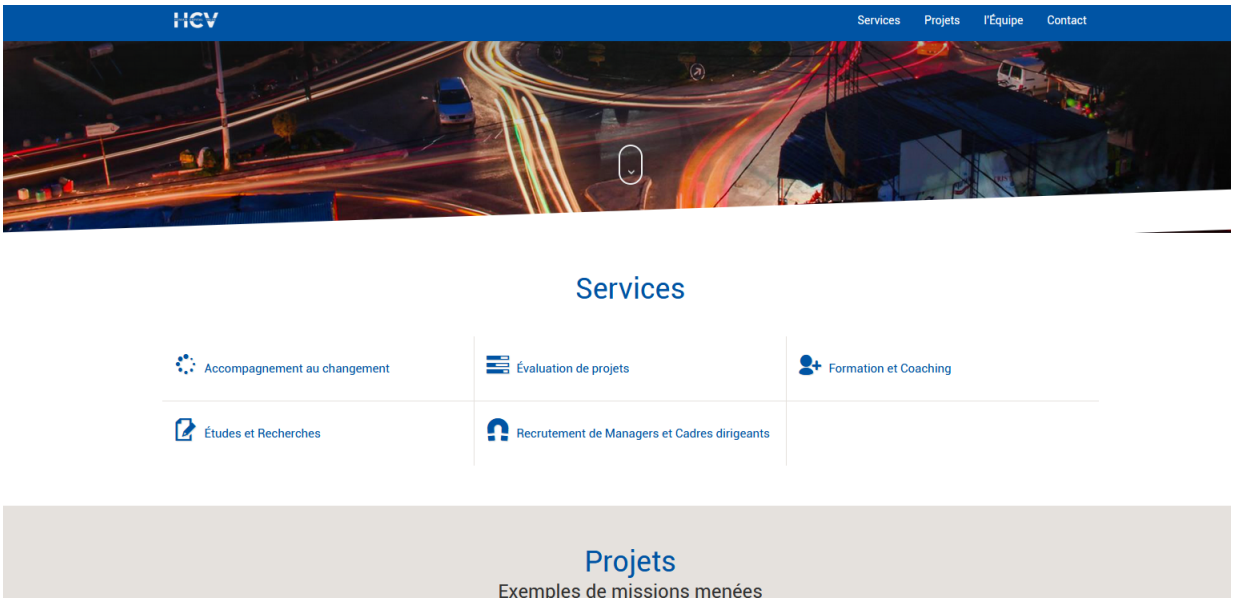

Figure 4.1: old service interface

4.3.1.2 New service interface

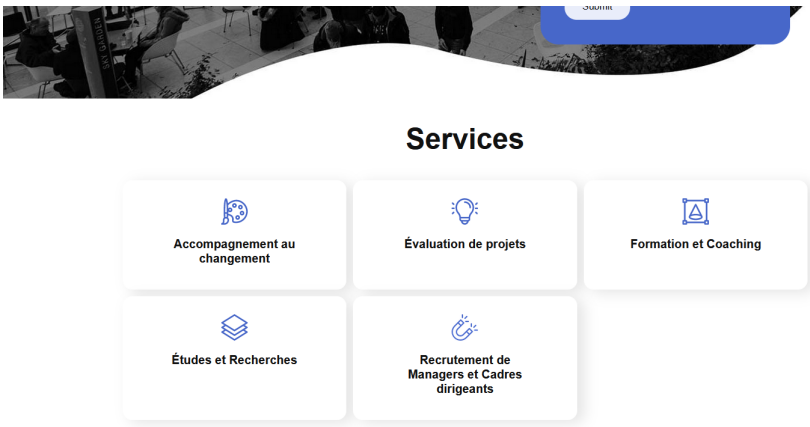

Figure 4.2: new service interface

4.3.1.3 Old project interface

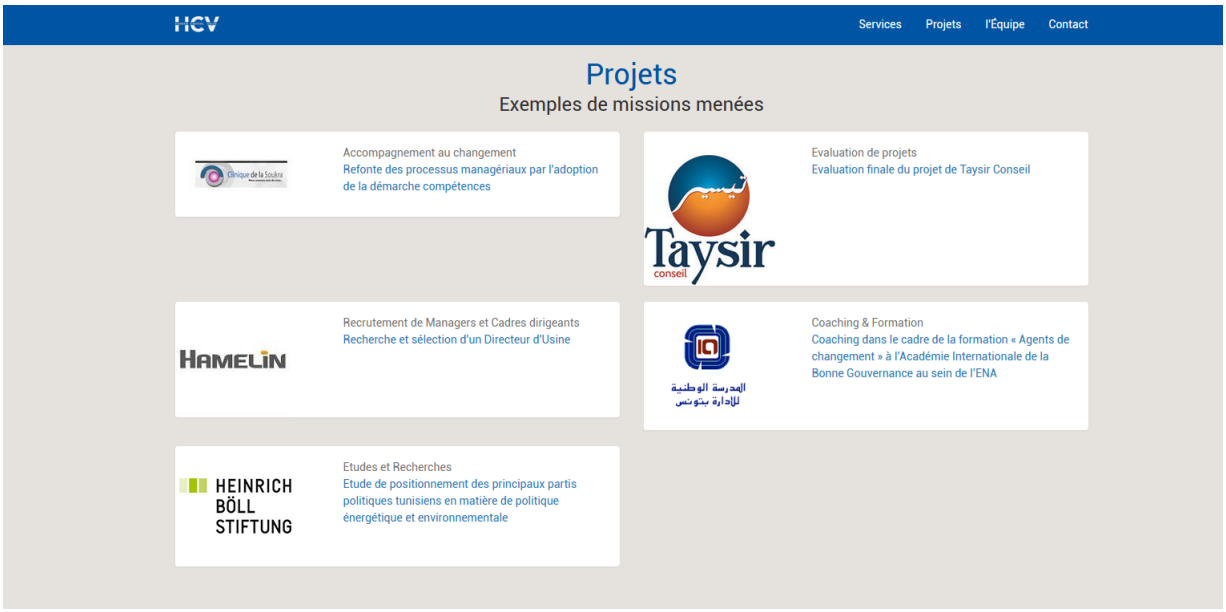

Figure 4.3: new service interface

4.3.1.4 New project interface

Figure 4.4: new service interface

4.3.1.5 Old Team Interface

Figure 4.5: old team interface

4.3.1.6 New Team Interface

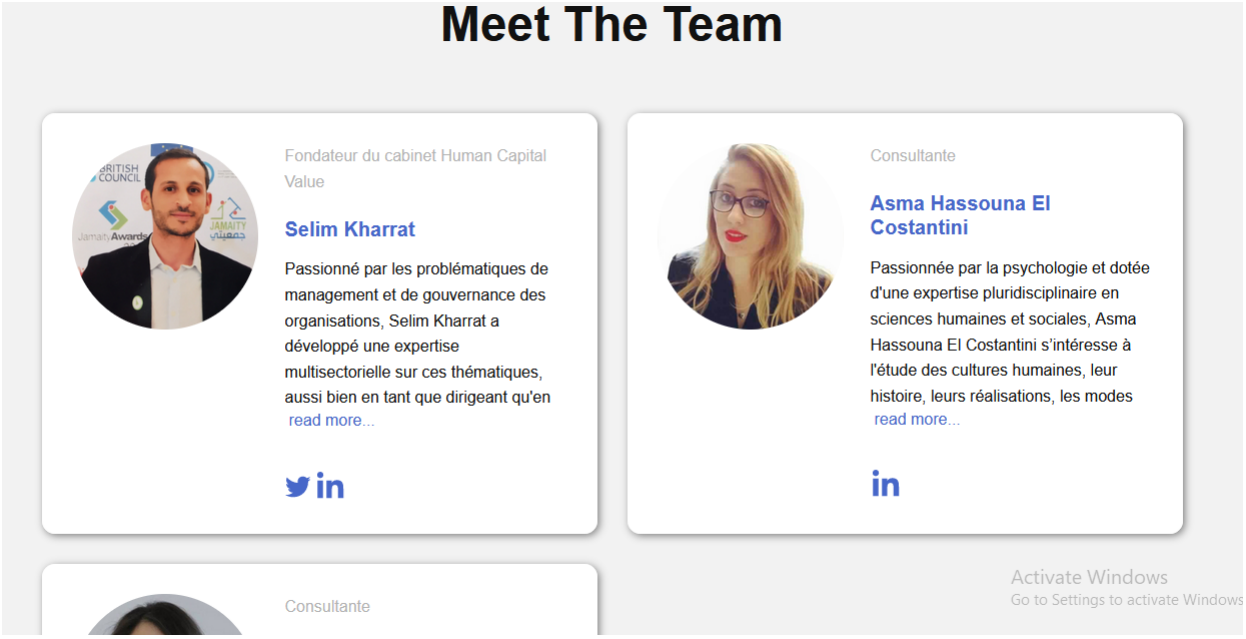

Figure 4.6: new team interface

4.3.1.7 Old contact Interface

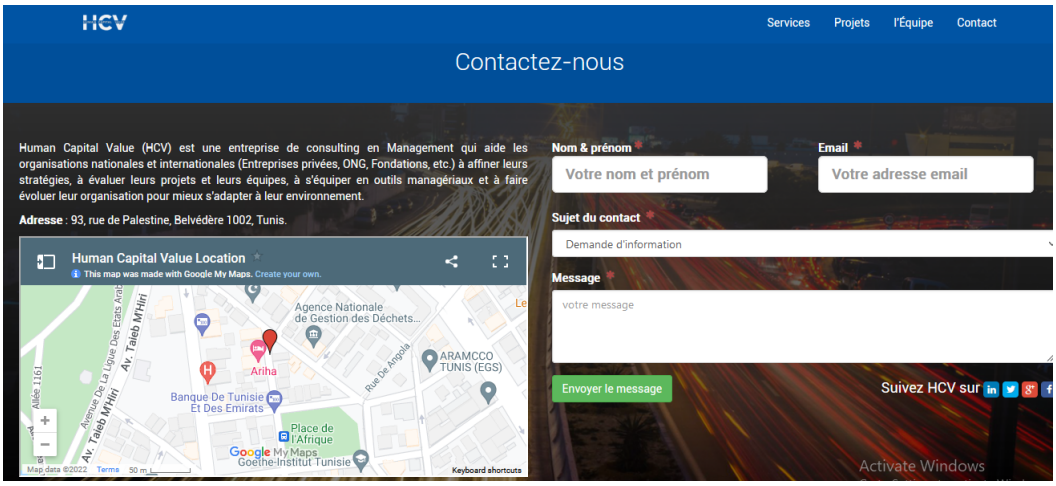

Figure 4.7: old contact Interface

4.3.1.8 New contact Interface

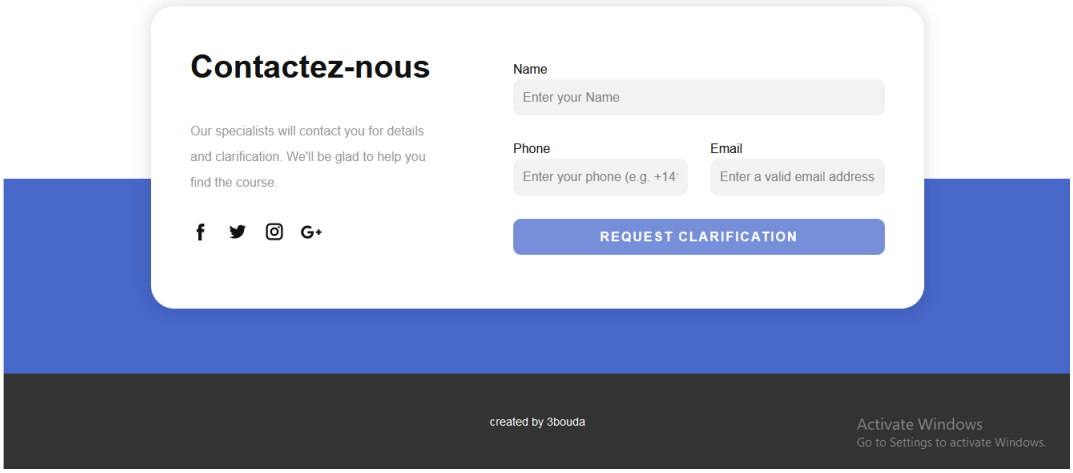

Figure 4.8: new contact Interface

4.3.1.9 View list of employees

Figure 4.9: View list of employees

4.3.1.10 Add an employee

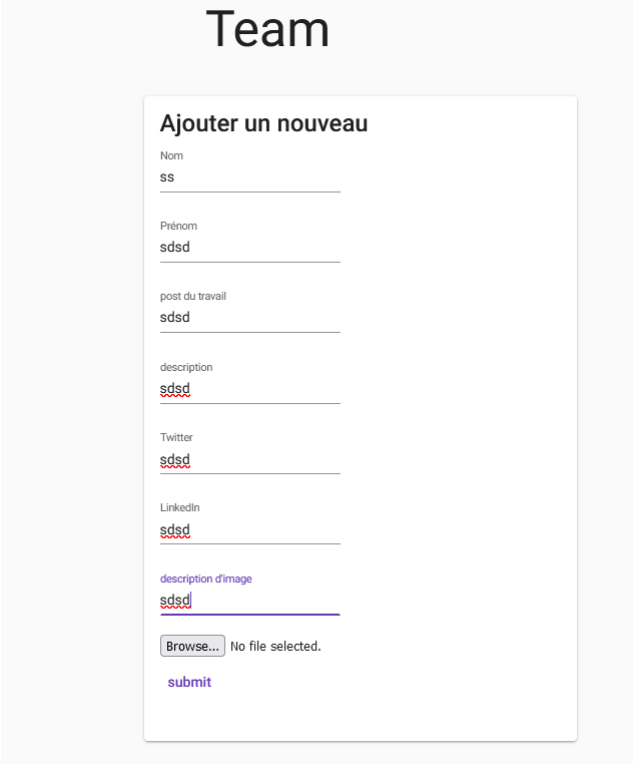

Figure 4.10: add an employees

4.3.1.11 Delete a customer

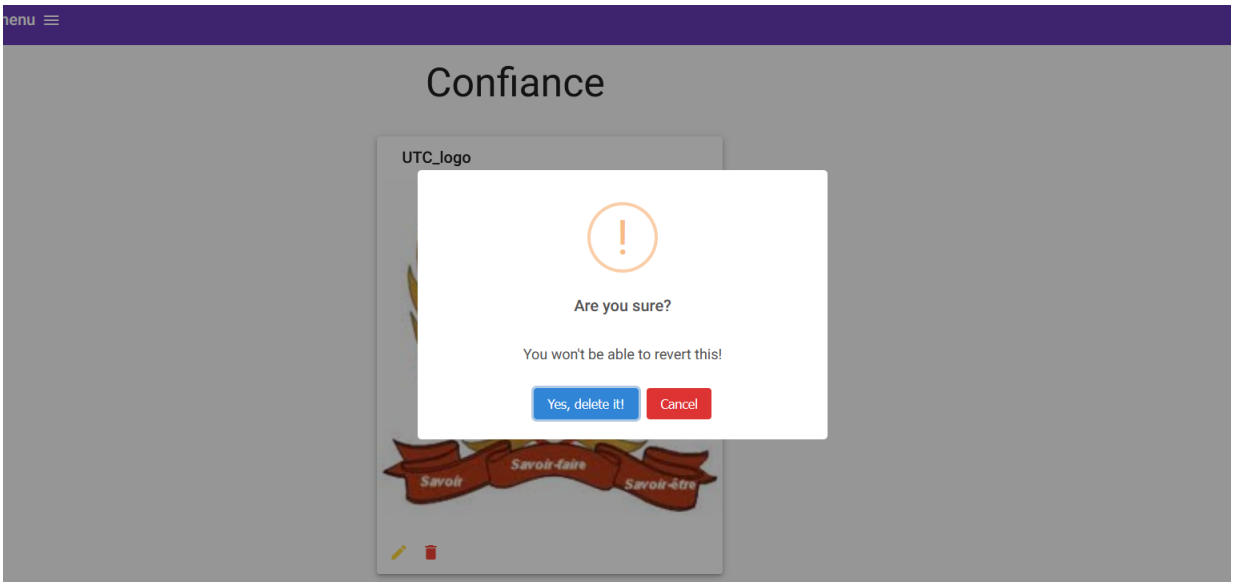

Figure 4.11: delete a customer

As per UI/UX standards the user must have the option to confirm or cancel their action (add, edit or delete) .

4.3.1.12 Add a customer

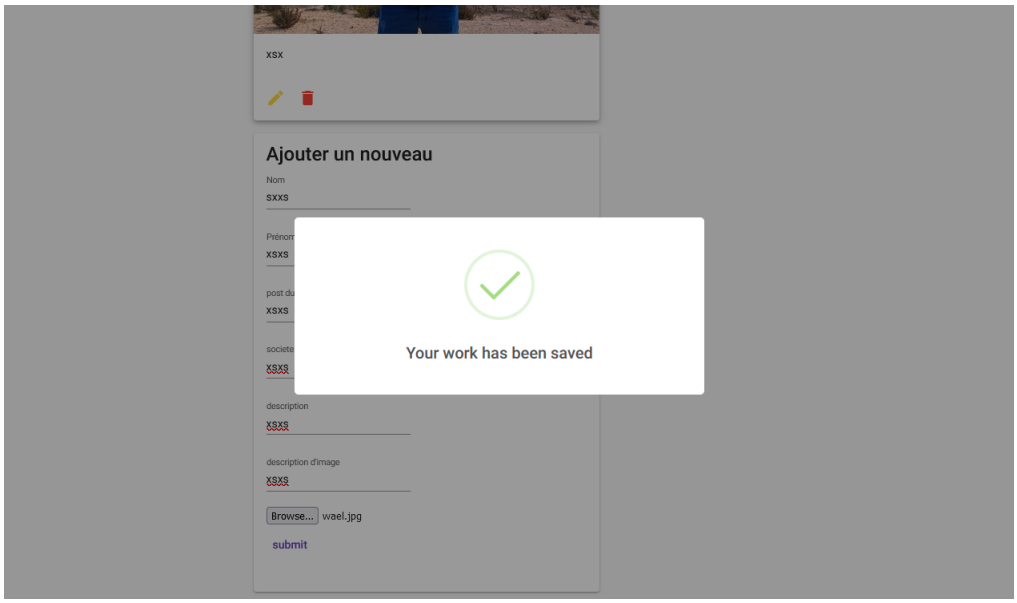

Figure 4.12: Add a customer

As per UI/UX standards the user must get notified after every action they make.

4.3.1.13 Drag and drop events

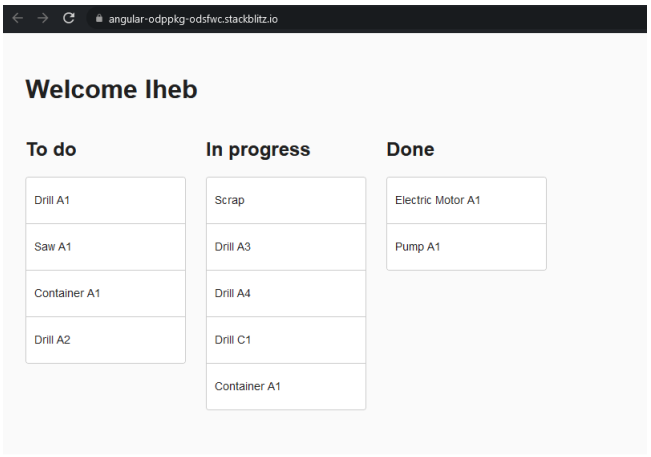

Figure 4.13: Drag and drop events

The employee can create and manage an eventList, which is composed of multiple event brackets, and then drag and drop tasks between said brackets.

4.4 Conclusion

In this chapter I have presented the interfaces realized in our platform in order to clarify its stages of use.

General conclusion

To conclude, I can say that this application was a very important step- in my training cycle, as it was a very interesting opportunity to know how to apply my theoretical knowledge already acquired on the practical plan.

In addition, the web application developed allowed me to acquire a more my knowledge of application development, which will be without doubt, useful in my professional life.

Webographie

[1]https://laurent-audibert.developpez.com/Cours-UML/?page=diagramme-classes consulted in 21/01/2022
[2] https://fr.wikipedia.org/wiki/Visual_Studio_Code consulted in 23/02/2022
[3] https://en.wikipedia.org/wiki/XAMPP consulted in 23/02/2022
[4] https://www.mongodb.com/ consulted in 23/02/2022
[5] https://firebase.google.com/firebase/cloud-firestore consulted in 23/02/2022
[6] http://glossaire.infowebmaster.fr/html/ consulted in 23/02/2022
[7] https://www.atinternet.com/glossaire/css/ consulted in 23/02/2022
[8] https://fr.wikipedia.org/wiki/Angular consulted in 23/02/2022
[9] https://www.infoq.com/fr/articles/microframeworks1-spring-boot/ consulted in 23/02/2022
[10] https://blog.webnet.fr/presentation-de-postman-outil-multifonction-pour-api-web/ consulted in 23/02/2022
[11] https://material.angular.io/ consulted in 23/02/2022
[12]https://sweetalert2.github.io/ consulted in 23/02/2022
[13] https://www.heroku.com consulted in 23/02/2022
[14]https://careerfoundry.com/en/blog/ux-design/the-difference-between-ux-and-ui-design-a-laymans-guide/