Ministry of Higher Education
And Scientific Research

Professional Personal Project Report 1

Major : Software Engineering

Made by:

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Professional Supervisor : ……Mme.Rym Bechaladya……

Project :
Development of an embroidery digitizing site

Academic Year 2021-2022

Dedications

From the depths of my heart I dedicate this work

To my parents, to whom no dedication can express all the love, respect and gratitude and devotion that I have for them: "May God keep you",

To my dear brothers, thank you for your love and encouragement. I wish you all happiness and prosperity in your lives. May this work be a testimony of my love and my deep deep gratitude,

To my friends with whom I have shared the best of times, words are hardly enough to express the attachment and affection I have for you,

To my great family, my teachers and those who have helped me, "May God bless you and
and preserve your health and happiness".

Rayen Grid

Appreciations

I would like to thank all those who have helped me, in their own way, to carry out this work.

First of all, I would like to thank my professional supervisor at DIGITHAMS Mme. Rym Bechadlya
, for her welcome, her help and her advice.

I would like to show my gratitude also to my academic supervisor at the Central University MR Naoufel Kraim,
for his follow-up and his directives. My warm thanks are also addressed to the collaborators of DIGITHAMS who welcomed me and who did not stop answering all my questions throughout my internship

General Introduction

Nowadays, digital transformation is becoming an essential lever in all areas to align business models with the new requirements of a world where virtualization has become the only way to really stay in the competition. It is in the context of the the digitalization of the business process of embroidery that our work is part of.

This project responds to a concrete need of embroidery companies who wish to integrate
a tool that allows them to market their business details and show the client the provided services and their corresponding prices.

Faced with such a business process, the information system is confronted with challenges such as the significant loss of time along the entire process of reaching and choosing the right product.

In order to address the above issues, it was agreed to digitize the processing of viewing and requesting embroidery models.

I was asked to build a website in order to digitize the embroidery showcase business.

DIGITHAMS is a marketing firm specialized in the marketing, design and development sectors.

CHAPTER I: GENERAL CONTEXT

Introduction

This chapter presents the context of our project. First, let's present the host organization.
Then, let us detail the problematic, then the solutions that we will consider. We will finish by describe the working methodology adopted.

1.1 Company presentation

Figure 1.1: Entreprise Logo

DigitHams is a digital marketing agency in Tunis that uses the latest tools and digital technologies to collect information on the behavior of Internet users. Intervening on the various levers of online marketing, Digithams stands out for its expertise: a significant asset to make your business take off.

1.1.1 Activity

Digithams is an e-marketing agency, specialized in :

- Communication and advertising.
- Web development and web-marketing.
- Design of websites

1.1.2 Flowchart

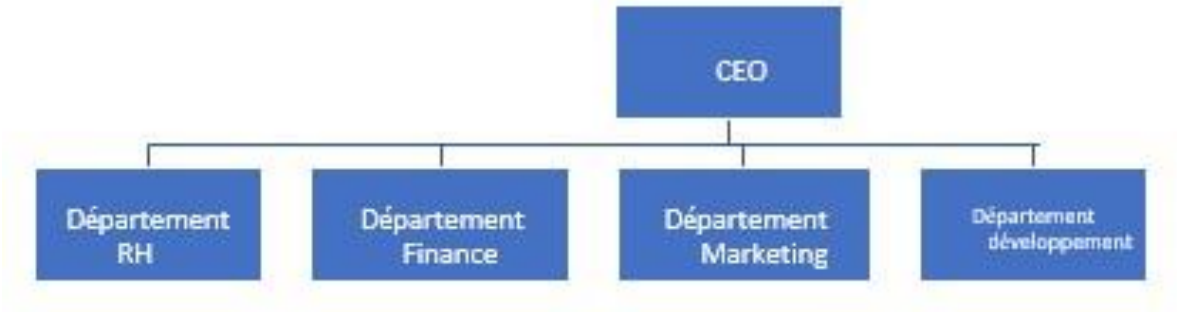

Figure 1.2: Flowchart

1.2 Study and critique of the existing

Embroidery is a service that a lot of textile/fabric companies must go through for the smooth running of their business. But the customer has to go directly to the factory's office in order to use his services. Moreover, even the seller has no means to make his service available, except for advertisements or social networks. Thus, a reliable and automated way to inform a large number of customers about the available services is needed.

With the growth of information and communication technologies, presenting a website has become an unavoidable necessity for merchants. The current

solution is manual, thus posing different problems, namely:

- Major waste of time from having to search for the right software
- Lack of diversity in the providers of this service
- Less visibility in the market
- The absence of a showcase that presents the various embroidery services

1.3 Proposed solution

Thanks to the information and communication technologies, new development perspectives appear in the enlargement of the economic market. The creation of a web site serves the purpose of having more visibility. The use of the Internet as a mass communication segment, also allows to lower marketing costs and other expenses. With the transmission of broadband and the popularity of the web culture, the trust of users regarding websites is growing.

Most people today use the Internet to browse through different providers. Consumers and businesses are increasingly turning to websites that allow for comparison, availability of services, and price verification resulting in considerable time savings.

This project consists of the implementation of a showcase website that manages the embroidery machines software services and this is possible through a responsive and ergonomic interface.

This web application will allow to target new customers and to offer a better quality of service in the embroidery sector.

1.4 Work methodology

To guarantee the good progress of the development in terms of quality and productivity, the choice of the working methodology is essential. Given the complexity of systems today, software engineering tries to remedy this complexity by offering a process to follow with very precise steps. This is the principle of work methodologies. We have chosen the eXtreme Programming method which is an agile method and the most adapted to this project. The principles of eXtreme Programming are not new, they have existed in the software industry for a long time and are used in other work methods.

1.4.1 Principles

The **eXtreme Programming** method is based on :

- A strong reactivity to the change of the customer's needs.

- The quality of the work provided.

- The quality of the tests carried out as soon as possible.

eXtreme Programming is based on three fundamental values :

1. **Communication**

Software development is inherently a team sport that relies on communication to transfer knowledge from one team member to everyone else on the team. XP stresses the importance of the appropriate kind of communication – face to face discussion with the aid of a white board or other drawing mechanism.

2. **Simplicity**

Simplicity means “what is the simplest thing that will work?” The purpose of this is to avoid waste and do only absolutely necessary things such as keep the design of the system as simple as possible so that it is easier to maintain, support, and revise. Simplicity also

means address only the requirements that you know about; don’t try to predict the future.

3. Feedback

Through constant feedback about their previous efforts, teams can identify areas for improvement and revise

their practices. Feedback also supports simple design. Your team builds something, gathers feedback on your design and implementation, and then adjust your product going forward.

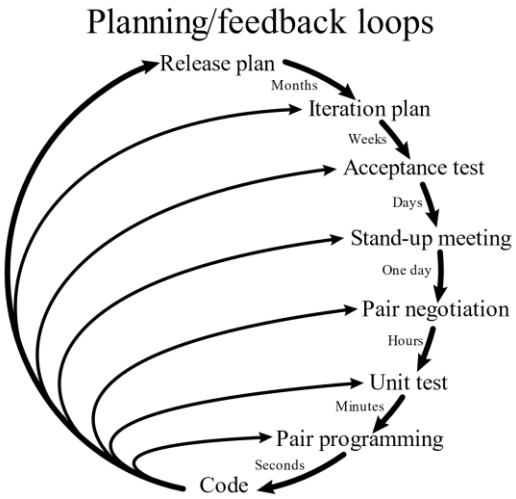

Figure 1.3 : Planning loops

1.4.2 Functioning

The three values of XP are broken down into eight mutually reinforcing practices:

- **Active customer**: the customer must be involved throughout the project. This representative must have

a global vision of the result to be obtained and be available to answer the team's questions.

- **Continuous integration**: when a task is completed, it is immediately integrated into the complete product. This avoids the overload of work due to the integration of all the elements before delivery. Testing facilitates this integration: when all tests are positive, the iteration is complete.

- **Small deliveries**: deliveries should be as frequent as possible so that the customer can give feedback and thus the changes are quickly taken into account by the team.

- **Functional tests**: Based on the scenarios defined by the customer, the team creates test procedures that allow to verify the development progress. When

all the functional tests are passed, the iteration is complete.

- **Unit tests**: for each feature, a test is written to verify that it will work as expected. This test will be kept until the end of the project, as long as the functionality is required. Each time the code is modified, all the tests are run in order to identify immediately if there is a problem.

- **Simple design**: we go straight to the point by focusing only on the current needs of the customer.

The simpler the application is, the easier it will be to make it evolve during the next iterations.

- **Refactoring**: the project is regularly improved. The The goal is to have a good foundation and better working conditions for the team.

- **Collective ownership of the project**: the responsibility for the project is collective. Each team member can modify all parts of the project, even those on which he or she has not worked. The objective is to be efficient and fast.

Conclusion

Through this chapter, we have introduced the general context of the project to be realized and its methodology of development as well as the presentation of the host company. The following chapter will deal with the definition of the needs and the working environment.

CHAPTER II: Analysis and specification of needs

Introduction

The success of any study depends on the quality of the initial phase. Consequently, the needs analysis phase is the basis for the start of our work as well as a determination of the steps for the future. In this chapter we will identify the functionalities of our site for each type of user, indicating the functional and non-functional needs.
Therefore we will identify the actors and define the environment of our work.

2.1 Identification of actors

Administrator:

For websites, he is generally called "the webmaster". It is the one who ensures the activity and the dynamism of the site by watching over the update of the products, their prices and their availability.

Visitor:

It is an individual who surfs the net, to look for a product in order to buy it or simply to have an idea about the models and their price. Up to this point, it is a simple unknown user who could be a potential customer.

2.2 Identification of needs

2.2.1 Functional needs

Administrator: (Role to be included)

- Authentication: The administrator accesses the application with a login and a password.
- Manage products: The administrator is the only person who has the right to manage products on the website(Add/Modify/Delete)

Visitor:

- Consult the catalog: The user has the right to consult the different pages of the site in order to consult the products presented.

2.2.2 Non-Functional needs

- Ergonomic design: The interfaces presented are user-friendly and intuitive. The user must

be guided smoothly to the products and the site must be responsive.

- Simplicity: The website is clear and easy to manage and to extract information from it, guaranteeing the most comfortable use.

- Maintainability: the site code is easy to read and understand in order to maintain it quickly.

2.3 Global Use Case Diagram

This figure describes The Global Use Case Diagram for Our website:

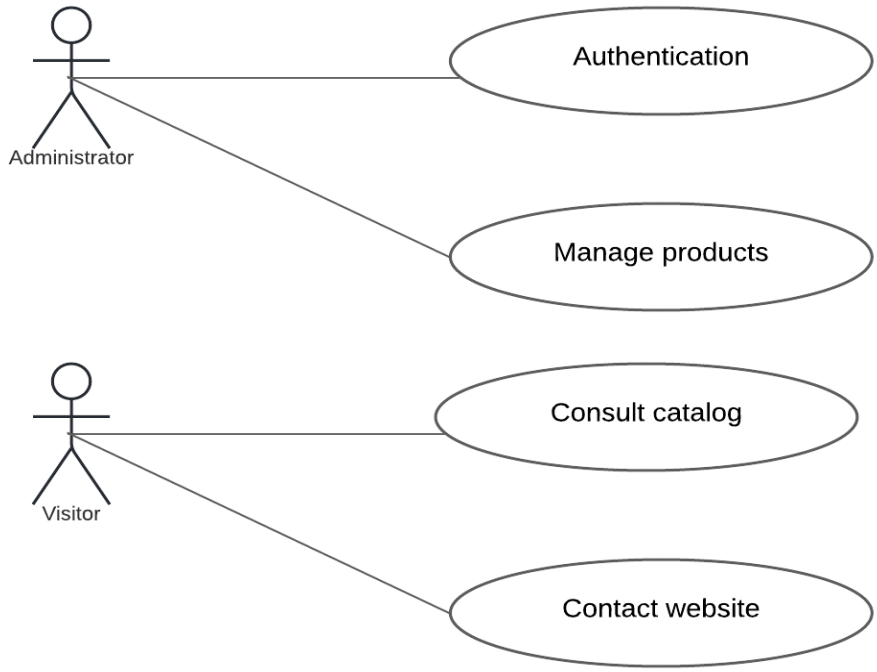

Figure 2.1: Global use case diagram

2.4 Activity Diagram

Conclusion

In this chapter we identified the system's actors as long as our functional and non-functional needs, we also made the global use case diagram. In the upcoming and last chapter, we will see our working environment and the decision behind it plus the actual website we created.

CHAPTER III: REALIZATION

Introduction

In this chapter, we will specify all the technical choices of hardware and software environment that we have made for the development of the website. Then, we will present the interfaces of all the pages included in the site for the user.

3.1 Development environment

3.1.1 Hardware environment

Our website was developed on a laptop computer with the following characteristics:

- **Processor:** Intel® Core™ i3-6100u @ 3.54Hz
- **RAM:** 8GB
- **Operating system:** Windows 10 Professional
- **Hard Drive:** 1TB
- **Graphic Card:** NVIDIA® GeForce® MX 920

3.1.2 Software environment

The development of web sites requires software tools that are installed in our working environment and used during the implementation of the project.
The technological choice is based on a lot of factors and in our case, a rather simple showcase site with practically no functionalities, there are many options for us to use. The programming language choice was JavaScript for its great performance, popularity and easy to access resources, which we preferred on PHP that also was a strong candidate. Now when it comes to **JavaScript**, there are a lot of Frameworks to choose from, mainly **Angular**, **VUE** and **Reactjs**. We eliminated VUE for its limited resources and documentation and presence in the current market. As for Angular, a rather strong and reliable Framework, its harder to learn and master as its mainly enterprise oriented, so the learning curve would be quite huge compared to ReactJS and a month isn't enough to learn it and create projects with it.
So, our safest choice was **ReactJS** which is the most popular and required JS framework at the moment.

- **Html5, CSS3 and JavaScript:**

As a web developer, the three main languages we use to build websites are HTML, CSS, and JavaScript. JavaScript is the programming language, we use HTML to structure the site, and we use CSS to design and layout the web page.

These days, CSS has become more than just a design language, though. You can actually implement animations and smooth transitions with just CSS.

Figure 3.1: Html JS CSS logo

- **ReactJS:**

React (also known as **React.js** or **ReactJS**) is a free and open-source front-end JavaScript library for building user interfaces based on UI components. It is maintained by Meta (formerly Facebook) and a community of individual developers and companies. React can be used as a base in the development of single-page, mobile, or server-rendered applications.

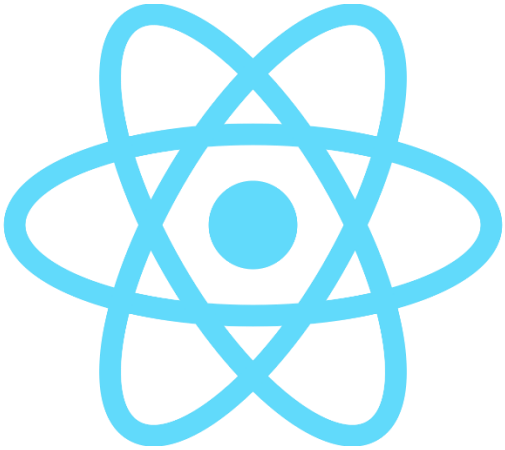

Figure 3.2: Reactjs logo

- **Bootstrap:**

Bootstrap is a free and open-source CSS framework directed at responsive, mobile-first front-end web development. It contains HTML, CSS and (optionally) JavaScript-based design templates for typography, forms, buttons, navigation, and other interface components.

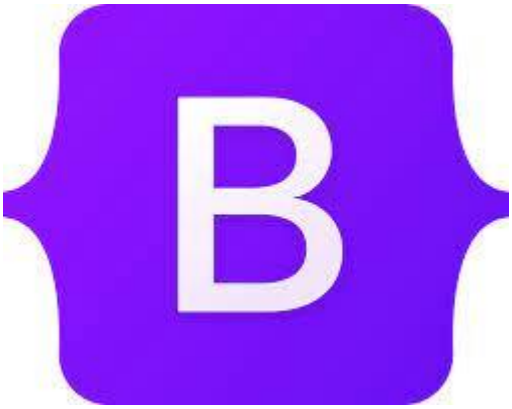

Figure 3.3: Bootstrap logo

- **Heroku:**

Heroku is a cloud platform as a service (PaaS) supporting several programming languages. One of the first cloud platforms, Heroku has been in development since June 2007, when it supported only the Ruby programming language, but now supports Java, Node.js, Scala, Clojure, Python, PHP, and Go.

Figure 3.4: Heroku logo

3.2 Achieved work

3.2.1 User Walkthrough

HomePage

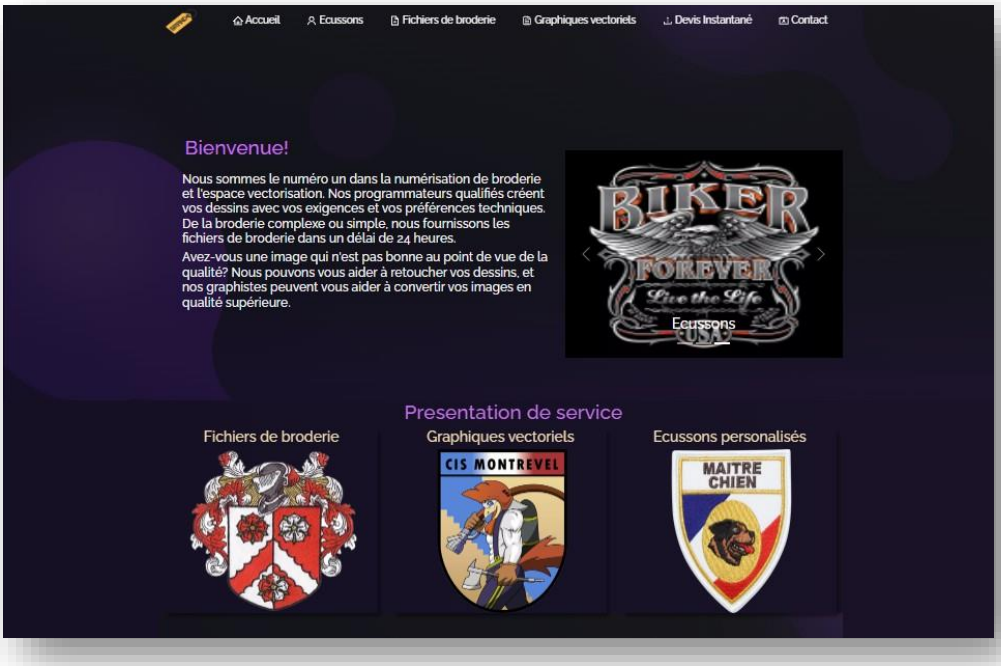

Figure 3.5: Homepage interface 1

Figure 3.6: Homepage interface 2

As soon as the visitor enters the website, a welcome interface is presented with the products on offer as well as a small presentation of the embroidery company (figure 3.5). He can also go to the contact page to send a message to the platform (figure 3.7).

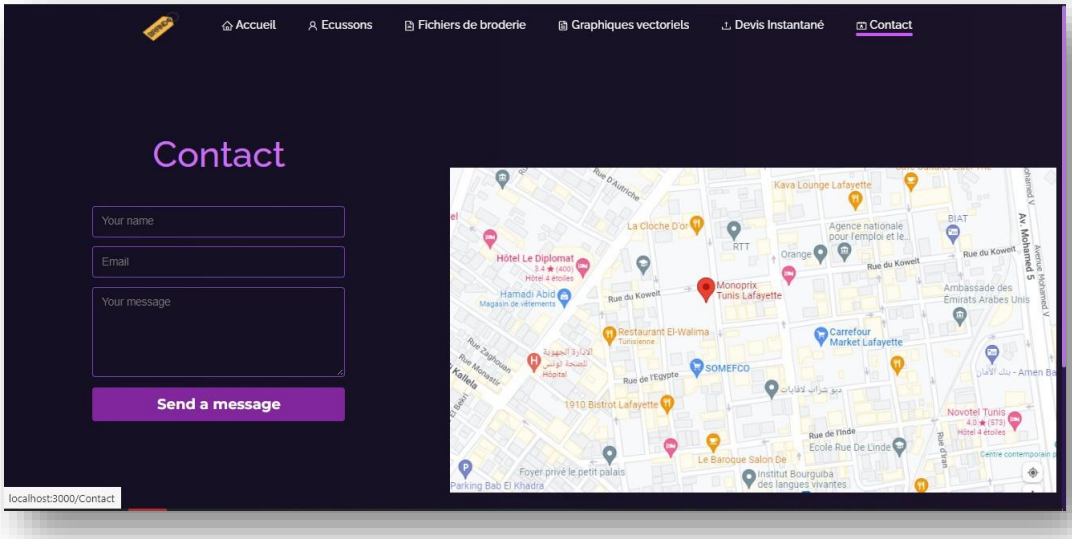

Figure 3.7: Contact interface

Catalog

The user can browse the different catalogs and their prices and choose the service that suits him without having to go visit the actual company.

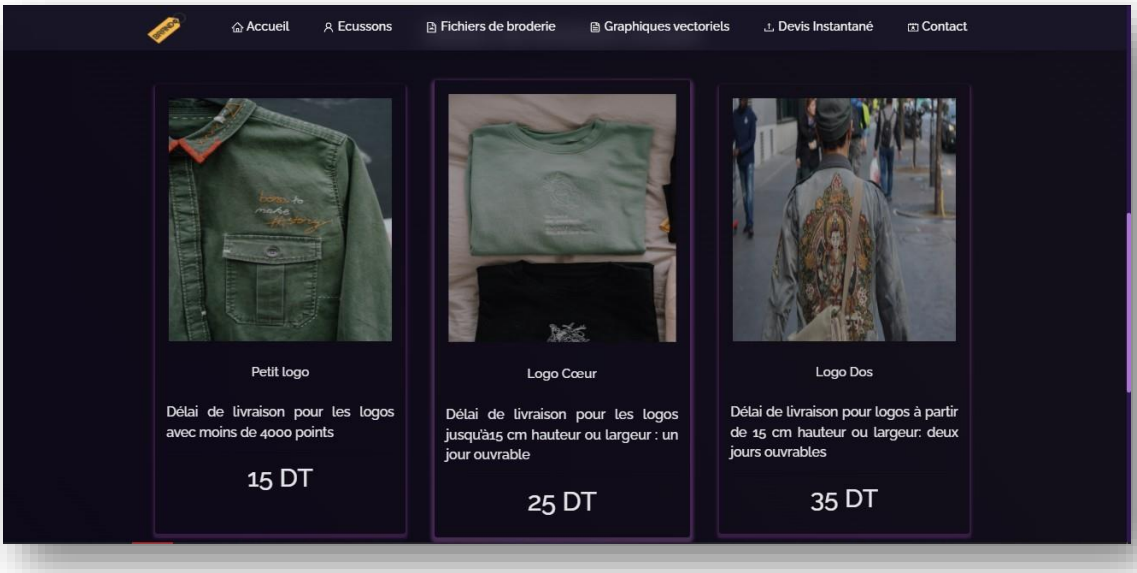

Figure 3.8: Fichiers de broderie catalog interface

Instant approximation

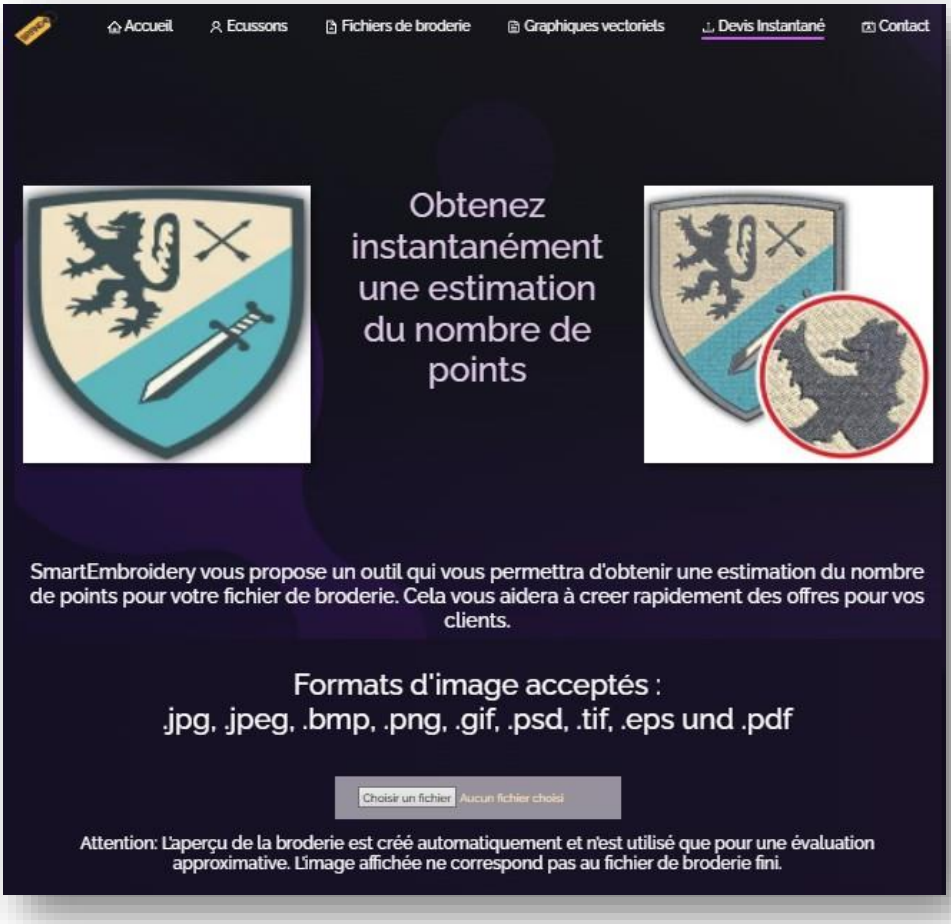

Figure 3.9 : Instant approximation interface

The user can upload an image he chooses, then an approximate number of points needed for the embroidery is estimated using a formula provided by the company.

Conclusion

In this final chapter we discussed the used technologies and the reason behind them, plus we showed some of the interfaces we created.

General Conclusion

This report is the result of the work carried out within DigitHams during a period of one month as part of internship project. Throughout the process of preparing the website we put in action the knowledge we acquired during the university years and the personal skills we gained working on personal projects.

The tricky part about this site is the lack of information and resources as it provides a rather niche and underground service. Plus, while developing the website, we encountered some difficulties including making the site responsive and creating a slick modern design which we made from scratch and was really time consuming, considering we had to check the online documentations several times. But, we managed to overcome every problem that encountered us and created a decent looking website in the short time span of one month, its not finished yet as we are still working on creating a back-end for the yet to be created admin role, and adding the option of managing products.

As for the working environment, it was a great experience and I'm so glad I had the chance to work with such cool people. The development department was a small one with only a hand-full working there, so everyone was close to each other and always there to help you out and answer your questions, and I'm glad i was a part of it.