EPITECH INNOVATIVE PROJECTS

La Vie est un Jeu !

Specifications

The purpose of the specification is to set the requirements for making our service.

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Summary

"La Vie Est Un Jeu" is a 3-year project as part of "Epitech Innovative Projects" with a group of 10 students.

This project, as a website and mobile applications, offers users to excite their day. To do this, they are offered a fun way to set goals, achieve them, collect them and then share them. It is therefore both a game and a social network, for all ages!

The website will show as the first view some presentation slide of the project. The user's home page, once connected, will contain a short flow of information (eg when a user has set a objective) or a long one: when a user has made a goal and is sharing it.

The user profile page will contain an array of medals representing the goals he has done. We call the achieved targets as "Achievements", in relation to those that can be found in games Videos

The project will be using a new and innovating technology: Ocsigen, a powerful web server and framework in OCaml.
The web server will be hosted on a Dedibox.

The team will work wisely in order to complete the project despite the distance between the members. Indeed, throughout the second years of the project, members will be scattered across all the world for one academic year abroad required.

This project is ambitious by its technical challenge, with the use of a little known technology, but also by its sought success from its future users.

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2.2	Corsin Simon	Corrected translations	05/07/2012
2.3	Glorieux François	Updated with new technologies	19/03/2013

Contents

Chapter I

Introduction

This specification is a contractual document to define the specification of "La Vie Est Un Jeu", our EIP.

It specifies the set of features, in addition to site architecture and mobile applications.

The internal structure of the database will also be described.

This document will also detail the potential targets of the project and try to estimate the financial and time constraints required to complete this project.

Finally, the opening provided to third party developers will also be discussed.

Chapter II

Epitech, EIP and "La Vie Est Un Jeu"

II.1   Epitech, a computer school like no other

Epitech is a school computer experts. Its educational projects directly involves students in their learning and makes them better able to react and adapt easily, for example to technological developments which will be held during their career.

II.2   The EIP, a key component of academic success

An Epitech Innovative Project or EIP is the key element of the Epitech's curriculum. This is a graduation project involving a minimum of six students around a common goal. This project is conducted over a period of three years, much larger than those of projects completed in the first three years of study. In addition, the EIP asks students to confront the enterprise world.

II.3   "La Vie Est Un Jeu", more than just EIP: a revolution!

As part of our EIP, we decided to make a fun social network based on "lists of things to do before you die": it defines all the things the author wants to make during its existence, a kind of memo not to ruin his life. Our project will allow our visitors to build their own lists and validate their achievements while sharing them with their social networks. Thus, each action performed by a user (adding an activity, success or failure) will be a thread in which visitors and their networks can discuss and share different types of media on it(photos, videos, etc..). This thread will be on the own information flow of each one. The activity of a user is validated by its own network and will appear as a "success", as in a video game. The site will eventually offering other characteristics specific to video games.

Chapter III

Requirements and project information

III.1   Recipients of the project

Users targeted by the project are numerous. A person who has a hobbie or a passion covered by the site may have enough reason to sign up.

The site as mobile applications are designed for an extended internationalization.

III.2   Using the project, compared to existing

For end users, the project will consist of a website and several mobile applications including Android, iOS and Windows Phone. For third party developers, an API will be created allowing the creation of new uses.

The project is created to respond to a set of features not present in existing projects. These combined features are not present on the sites or competitors. Indeed, we wish to establish a platform playful enough to be visited daily, without neglecting the social aspect allowing visitors discussing their leisure in their network and sharing his experiences through photos and videos .

After the first year of project work in partnership with INRIA and KOALAB Epitech, we believe to have a functional site. During the second year of work on the EIP we would like to sign commercial partnerships with various actors in cultural areas or events. This period will also be an opportunity to add new features that meet new needs from users.

III.3   Re-technological context

Today, more and more Internet users are equipped with smartphones, it is even provided that the number of Internet mobile users will exceeds the number of settled Internet users within a few years.

To front this change and cope with the significant expansion of new technologies, we chose to offer to our users a fat client to each major mobile platforms.

III.4   What is a "Achievement"?

The term achievement (which is like a success) is, in gaming, a goal set by the player, outside the main goal (which is win or finish the game).
The Achievements are awards which add challenge for the player.

We could use a French translation of the term achievement but we believe that this one is most popular in the gaming world.

The Achievements allow the player to explore more deeply the game content and therefore to explore new horizons.
The achievement is often a good time for the player.
He feels a certain satisfaction and feels rewarded for the effort.
It can then share with his friends to collect the honors or challenge their friends to do the same or better, which greatly improves the immersion in the game

We believe, it is interesting to draw an analogy with life.
The life is a game like any other and also deserves its Achievements.

III.5   Goal Final Project

The project aims to create a user community around a system of "Achievements", directly related to everyday life, passions or professional life.

Targeted users are very numerous. In theory, anyone with a hobby or passion is a target.

In the longer term, business partnership will target specific brands and locations.

The site will be multilingual, so open to internationalization.

Chapter IV

Description of the different parts of the Internet and mobile services

IV.1 The Website

IV.1.1 Overview of the homepage before login

The user will see first a slide show highlighting some "Achievements", arranged by date of publication and popularity, and the various functions of the site. This slide will aim to encourage the user to register.

The home page will also allow the user to register in the site. This registration is detailed below.

The last main feature of this home page is the ability for a user to login in the site.

The entrance could eventually help to find out the "Achievements" and its categories.

IV.1.2   The inscription, the first five minutes!

The objective of this step is clearly to avoid the heaviness caused by the information gathering the site needs to do with the future user (presenting a wild compact form is likely to scare him and making him to cancel his registration).

So we thought to a single-step mode system in which , while the user discovers our tool and its world, ask him subtle inquiries on a regular basis, in order to lighten this essential step which allow us to categorize the new registrant and offer contents based on these collected information.

In addition of combining the role of "guide" for the site discovery and "pollster" for information gathering, this method has the advantage of pushing the user to finish the presentation, and thus the registration. As the registration step continueas and when the group advanced (psychological effect, he wants to finish what he started, having already begun to contribute as well go all the way). The presentation from the growing interest, the chances increase of a registration upon arrival.

In the present state we can imagine as a first approach a simple question that leads to a single action mode "you are one click to enter our universe" with, for example, the choice of gender: Male, Female, Not stated .

IV.1.3   The user home page once logged

The home page of the user used the site presents its information flow, like the usual stream sites such as Facebook or Google +.

The menu must be discreet. The user should immediately see the four main tabs:

- flow (default homepage);

- the user's objectives (the inscriptions);

- "Achievements";

- "friends" of the user (or imported ajoutables social networks within the site).

A bar of "breaking news" constantly on top of the site will give the user the latest in a line "Achievements" to his friends and the new homepage.

IV.1.4   Flow tab

The Flow tab will be located in the middle of the main page and will feature displays the most recent "Achievements" made by the social network and to validate the circle of friends.

This feed will contain all the actions of contacts:

- "Achievements" to validate (see details below);

- the goals they set for themselves;

- new contacts;

- new on the site (or new information "Achievements").

IV.1.5   Details of an "achievement"

Each "achievement" will have a validation function to the image of "buttons" I like Facebook or "+1' 'Google +. It will allow users to indicate that they validate the publication in question. The validation support like the comments may be simple formatted text, picture and / or video. The photo (or "avatar") of the user will appear and the description of "achievement", next to it. It will also be possible to post comments below evidence of validation. A tab "More" will take place every "achievement" to get more information.

IV.1.6   Achievements tab

The user can select packages that contain the "Achievements" to accomplish. The packs will be available all classified by theme and in a subcategory, but the platform will first the user packs of "Achievements" corresponding to the interests of the latter, or its bracket Age. Once a package is selected, the user can also define some "Achievements" as its objectives, and so notify its network.

IV.1.7   Objectives tab

The Objectives tab allows the user to build a list of daily goals or things to do before dying completely. The purpose is to filter the "Achievements" that the user does not wish to make

an immediate and so clear that they will accomplish in the short term. The page is intended to be regularly consulted: it is from this tab the user can announce the end of a goal, and thus obtain an "achievement" if his friends confirm the validation of the latter.

IV.1.8   Contacts tab

The user can see here their contact list and profiles of these, but also group contacts by group. User groups can then assign degrees of sensitivity.
The sensitivity ranges from 0 to 3 and to share the "Achievements" to contacts of their choice. See below.

IV.1.9   Profile Page

The Profile page contains information and allows a user to modify them. If the user is viewing the profile page of another member, he has the opportunity to interact with it in different ways (sending a message, request to add in the circle of friends, ...).
The profile page contains mainly badges "achievement" as a hunting scene. The user can click on the "achievement" for the full (text, photos, videos, comments).

IV.2   Application

Smartphone
    As for smartphones, we decided to use the internet to develop an interface based on the technology we use for our website, namely Ocsigen. This will allow us to be consistent in our guideline of code. This interface will be charged on all smartphone platforms. The advantage of this method lies in its total portability and is a continuation of the challenge we set ourselves: to use functional programming for our project.

IV.3   API

The API would provide developers access to the essential features of the site. We can come back, for a given user, and according to the wishes of the latter (token of acceptance), the list of "Achievements".

Chapter V

A Technology brand new, original and effective

V.1   Ocsigen, web server and powerful framework in OCaml

One of the two used technologies is called "Ocsigen" is a web server and a powerful framework entirely in OCaml.

Functional programming is completely adapted to the field of web as described in numerous articles on the internet, like this:
http://www-lipn.univ-paris13.fr/~loddo/funding/projet-hyper-learning.pdf

Its strong typing solves many security problems that may be encountered in PHP for example.

The framework is particularly well done and offers several levels of such session: Tabbed sessions, sessions by traditional client sessions per user (connected with the same login in several places), sessions with user groups and sessions "persistent" (retained after logging out).

Because it is recent, it was conceived and designed for HTML5, Javascript and the latest client-side web technologies. When programming with Ocsigen, we realize a truly comprehensive program compiled and run. The language used is the same: OCaml for the client side as the server side.

OCaml for easy handling of a tree, the generated code in HTML is done from an AST necessarily valid.

To learn more about this little gem:
http://ocsigen.org/

V.2 OCaml binding but ensuring stability and security

The advantages and contraites of functional programming is also applicable in programming with Ocsigen.

When you begin to write a program, even if the have started with a good foundation, it usually ends with a gas plant. And when you change something in one place, another feature to another place that depended on it becomes non-functional, and it takes time before one realizes it, often in production.
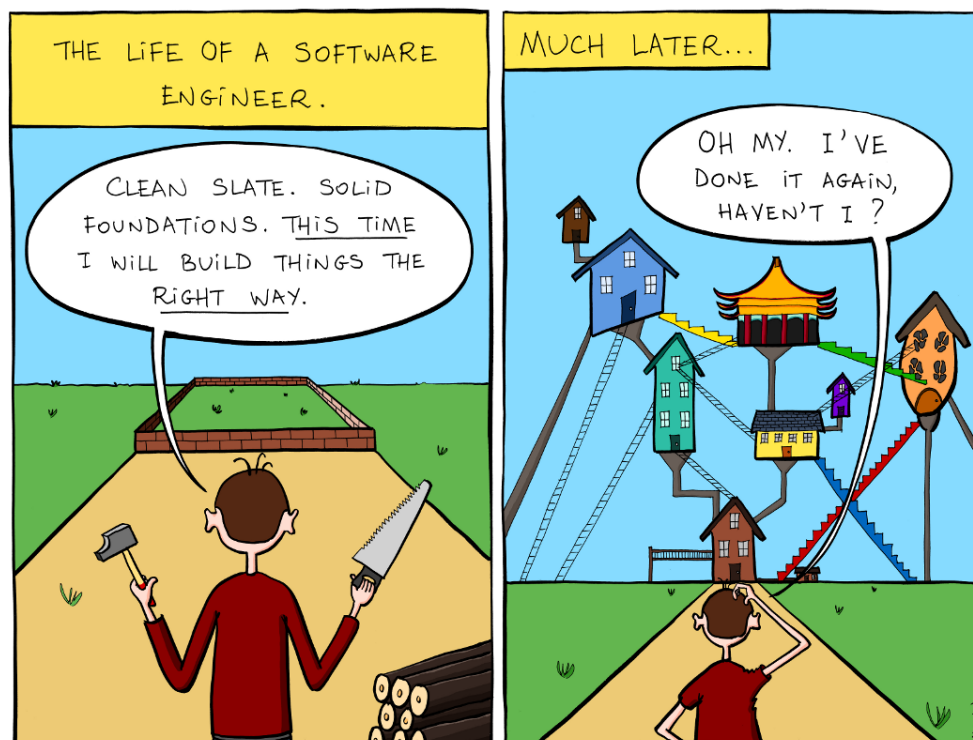
With OCaml and Ocsigen, a compiler is used very strict and strong typing. No deviation is tolerated!
Thus, if we modify a part of the program and it has an effect on another feature, then the program simply does not compile until everything is wrong.

This is very limiting for developers wishing to quickly create small applications without taking the head as they spend more time to ensure that the program compiles to realize the functionality itself.
For us, it's ideal. We know that by choosing this technology, we will spend much more time to design and build our project if we had chosen another more conventional technology for the web. But our ambitions are big on this project a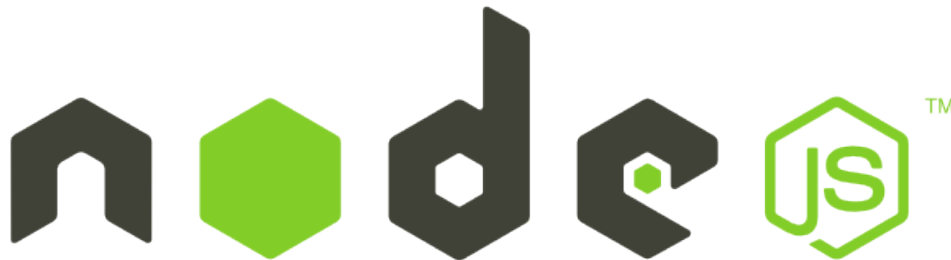nd we want to ensure its security, stability, performance, its purity and its total absence of bugs. We know that this solution corresponds exactly to our expectations.

V.3   Portability client / server

V.3.1   Server

For the server, after having changed our base idea which was using Ocsigen, we decided to switch for scalability and performance using **NodeJS**.

This software system in JavaScript offers us the possibility to easily extend the service on a lot of servers without having to re-think everything.

Unlike Ocsigen, new and in full expansion, NodeJS is a framework which has proven and used by some big names of the Internet, like Twitter.
He allows to manage a large amount of informations and users.

Our team is also more experienced in JavaScript than in Ocaml. So it considerably reduces the learning time of a new technology. It's also easier to find JavaScript developpers than

Ocaml ones.

As NodeJS is available on the principal operating systems (Linux, Windows, Mac OS X), our server will be portable.

V.3.2   Client

We decided to make a portable client-side service as well.

The choice of using client-side Ocsigen évidante since this is technology is adapted to three use cases that represent access *via* a landline, smartphone or tablet. Under the mobile web version Ocsigen manages over many features specific to mobile devices:

- Tactile (touch simple, touching slipped, ...)

- Geolocation

- Orientation

- Camera items:

Our service is guaranteed to be usable on three different platforms:

- standard Web browsers

  ○ Chrome

  ○ Mozilla Firefox

- Internet Explorer

- Apple Safari

- Opera

- Terminals mobile phone format

    - Android

    - iOS

    - Windows Mobile

    - BlackBerry

- Shelves

    - iPad

    - Android Tablet

For Any of these three platforms, we will have a different interface and adapted to the resolution and functionality.
For each type of device, we will have a different program, coded in the language appropriate to it, using our service Ocsigen *via* API developers detail later.
In all, we will:

- three different services Ocsigen

- 6 different mobile applications, in their respective languages

We can therefore say that "La Vie Est Un Jeu" is **ultra-portable**.

Chapter VI

Description of the database

VI.1   Description of the first level of tests

- Create an Account

- Access restriction by circles

- listing of "Achievements" already in the database

- Selection of "Achievements" from those available.

- Weighting "Achievements".

- classification: tests of different scoring algorithms.

- Restriction of the achievements for a class of users (those at level 3 will not be available at least 18 years of age and those at Level 2 under 14).

VI.2   Outline of the database
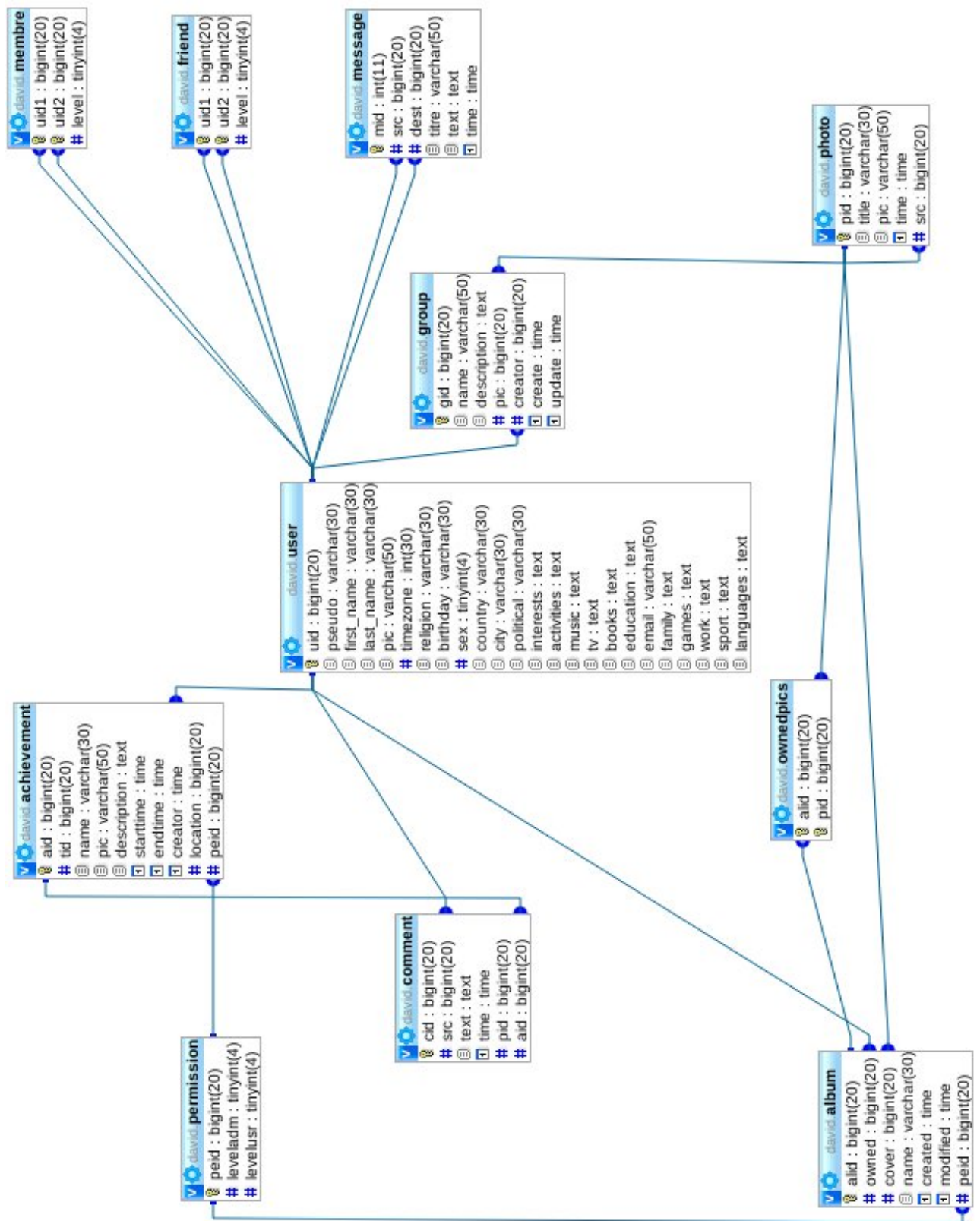
VI.3   Technology and portability of the database

For the database, we use a non-relational database service of NoSQL type developped by the **10gen** company.
This service is titled **MongoDB**.
It's based on the JavaScript Object Notation data structure (JSON) and is well-known for its performances and scalability.

In order to use other database types if needed, we plan to propose some database converters.

Chapter VII

physical and human environment of the project

VII.1   Hardware Environment

Our project runs on a server Ocsigen. It is installed on a Dell PRO Dedibox funded by project members.

Dell PowerEdge ® Server	R210
Processor	1x Intel ® Xeon ® L3426
Architecture	4x 1.86GHz, 64-Bit, Virtualization
RAM	16 GB DDR3 ECC
HDD	2 x 2TB SATA2 Raid 0 / Raid 1 HARD (H200)
Monthly price 49.99 euros HT	

VII.2   Costs

- A developer account for each store application (IOS: AppStore (99 $), Play Google (Android: 25 $) and Windows Phone Marketplace (99 $)) for mobile applications.

- A dedicated server, initially built for the development of the site can handle only a few users connected simultaneously at about 60 euros per month.

- A production server, which will later be used up to 600 euros per month.

- We see later, once the application is fully completed, to hire a graphic designer for "Achievements".

VII.3   Environment

and implementation tools

To communicate and discuss the project, our working group relies on several tools.

- The project has its official IRC channel (#life-eip on irc.epitech.net), whose goal is to provide quick support to users and contributors by managing a chat history.

- Additionally, the project team has access to a mailing list (hosted by google groups).

- It manages all documents relating to the project's progress through google documents.

- Documentation can be found on the showcase site: http://eip.epitech.eu/2014/lavieestunjeu/

- We have a bug tracker, wiki and tickets to a private GitHub repository.

VII.4   Technical Architecture

- The project is based on a Web environment in OCaml using Ocsigen and on a server in NodeJS.

- The project will also build on js_of_ocaml, a tool for compiling OCaml JavaScript.

- It will manage a database using MongoDB, a project initiated by 10gen.

For details, see the chapter on the technologies used.

VII.5   Users Information Security

- Implementation of a solution of "privacy level", a user can define a level of privacy for each user on its network.

VII.6   Sensitive points

- Information security is a priority for us. We will therefore pay close attention to what users are always aware at any time who has access to what information.

- We want to keep our ideas secret until we have a basic version available.

- The stability and security is our priority and will be provided through the use of Ocsigen.

Chapter VIII

Project Organization

VIII.1   Planning

From a global perspective, the project will proceed in three main sections: documentation, development and production.

VIII.1.1   First year: Documentation, Design

Before turning to the concrete realization of the product, we will devote ourselves to the drafting of several key documents to the project runs smoothly. Indeed, it is necessary to precisely define the details of the project, design, explore the various tools and technologies at our disposal and make choices, or develop partnerships.
Among the documents produced are:

- 50 words

- Study of the existing

- A detailed study

- Terms of Reference (3 versions)

- Gantt Chart

- Review Architecture

We will continue this study until September 2012.

VIII.1.2   Second year: Development, Code, Tests

Once the tools at hand, the specific and defined roles, we will begin to develop the product.

- Hello World! (01/08/12)

- **Connection**: (08/01/12)

- Form website (01/08/12)

- Facebook / Google + (01/08/12)

- Home (01/08/12)

- **BDD Management**: (01/08/12)

- Deployment database (01/08/12)

- categories and subcategories of Achievements (08/29/12)

- Course categories (29/08/12)

- simple Achievements (29/08/12)

- Contact Management (01/10/12)

- Contacts Facebook / Google + (10/01/12)

- Set up security and sharing (01/10/12)

- Share Facebook / Google + (01/11/12)

- Create Flow (01/11/12)

- **Management Achievements**: (01/11/12)

- Custom text (01/12/12)

- Videos and photos (01/11/12)

- Simple Comments (01/01/13)

- Comments videos and photos (01/01/13)

- User Profile page (01/01/13)

- Objectives Achievements by users (01/02/13)

- Filtering to display RSS (01/01/13)

- Finalization users (avatars, info ...) (01/02/13)

- Completing Achievements (01/03/13)

- guide discovery site (04/01/13)

- Finalization Site / Testing phase (01/04/13)

- Output of a first version of the site (06/01/13)

Late in the second year after the completion of the project, we will devote at least one month prior to testing to production. These tests would be
We believe putting it into production for a final version in September 2013.

VIII.1.3   Third year: Release, partennariats commercial, business creation

The last period will be devoted to communication issues, and to a lesser degree of development. Thus, during the last year of the project, we will try to express it in various ways to create community essential to our platform, in addition to the finalization of the technical product. We can thus benefit from user feedback in order to correct anomalies and refine the platform.

We wish to obtain partennariats to advertise our business platform.

We wish to register our project in many contests of innovation and startups to gain visibility and audience, and why not additional funding.

In short, the third year is dedicated to making this project a **success**.

VIII.2   The Team

During the product development team will be dispersed in several countries, making any teamwork difficult. We will allocate tasks so as to be able to work relatively autonomously: our project is composed of several distinct elements, we will arrange to not share one between members located in different places.

VIII.2.1   Distribution of roles

Below is the list of officers assigned to each category of tasks Project
Officials are not necessarily those that will perform the tasks, but are the ones who have the responsibility to ensure that these are made, making them themselves or by distributing the work.

VIII.2.2   Documentation, Design

- **Guillaume Caradec** handles the overall management of project

- **Barbara Lepage** directs the technical part.

- **Barbara Lepage** is responsible of the showcase site

- **Barbara Lepage** is responsible for documentation

- **Lassagne David** is responsible for design

- **Barbara Lepage** is responsible for training and OCaml Ocsigen

- **Nicolas Klarman** is grand master of "Achievements"

VIII.2.3   Development, code, tests

- **Barbara Lepage** is responsible for application development side Server.

- **Louvigny Guillaume** is responsible for development client-side applications for the web interface

- **Guillaume Caradec** takes care of the ergonomics, interface, the overall design

- **Lassagne David** is responsible for database architecture

- **Guillaume Louvigny** is responsible SQL

- **Le-Cor Wilfried** is responsible of the Android development

- **Francois Glorieux** is responsible of the Windows development

- **Youssef El-Outmani** is responsible for developing Blackberry

- **Nicolas Klarman** is responsible for developing iOS

- **Frank Lenormand** is responsible for multimedia (photos, videos, ...)

- **Guillaume Louvigny** is responsible social networks (Facebook, + Google, Twitter, ...)

- **Frank Lenormand** is responsible commit

- **Corsin Simon** is responsible for third party developers (API)

- **Wilfried Le Cor** User interaction is responsible

- **Nicolas Klarman** is responsible Gameplay

- **Francois Glorieux** community aspect is responsible

- **Corsin Simon** is responsible for testing the Release

VIII.2.4   Communication, company

- **Guillaume Caradec** is responsible communication

- **Guillaume Caradec** is sales manager

- **Barbara Lepage** is responsible for business

- **Barbara Lepage** is responsible for innovation

- **Barbara Lepage** is responsible for funding

VIII.2.5   Tools

We have at our disposal various tools to get organized and communicate more easily:

- a mailing list and an IRC channel, to treat all the various issues;

- a Google Docs file, so you can share documents related to the project and writing;

- Gtalk, Google's application for organizing video conferences via a browser;

- a Git;

- using Doodle to schedule meetings more easily.

Group members will meet **weekly** to discuss project progress, and unanticipated set of short-term goals.

VIII.3   Detailed schedule with specific dates

Please see the attached file `2014_GAN3_EN_lavieestunjeu.pdf`. It contains the Gantt chart of our project.

Chapter IX

Conclusion

IX.1   Document conclusion

This paper presented the specification so our EIP, "La Vie Est Un Jeu"

We have described all the features that will be proposed, which includes both the website and mobile applications.

Was also presented the definition of the database on all applicable platforms covered.

The API destined for third-party developers had also been defined.

Finally, he detailed also those who can win the project, and estimated the various constraints imposed by it be they financial or organizational.

IX.2   SWOT

	Helpful	Harmful
Internal Origin	**Strengths** - 10 people group, various profiles. - Epitech's EIPLab supervision - Several tools available: mailing lists, IRC, visio...	**Weaknesses** - Year abroad for most group members - High server and designer costs
External Origin	**Opportunities** - Regular discussions with the Ocsigen team - Social network growth - Ocsigen is attractive, secure and stable	**Threats** - Concurrents - Technology hard to use

Chapter X

Appendix

X.1   Location of team members during the second year of the project

Lepage Barbara and Long Beach	Berkey, USA
Caradec Guillaume	Paris, France
Corsin Simon	Paris, France
Francois Glorieux	Peking University, China
Klarman	Nicolas Paris, France
Lassagne David	Peking University, China
Louvigny Guillaume	Paris, France
El-Youssef Outmani	Peking University, China
The Cor-Wilfried	Sweden
Frank	Lenormand Finland

X.2   Glossary

Algorithm And finite sequence of unambiguous instructions to give the answer to a problem.

API In "French" Programming Interface, is an interface provided by a computer program for the interaction of programs with each other.

mobile application A mobile application is an application developed to be installed on mobile electronic devices.

Web Architecture Web-based architecture means the general structure inherent in a web environment.

Database A database is a lot of information stored in a computing device.

Breaking news Latest News in French "".

Bug Tracker In French "Software" issue tracking, software to help users and developers to improve software quality by finding the flaws of such software.

Specifications Specification is to simply define the specifications of a product or service to achieve.

Filing A repository is a centralized storage and organizing data.

Gantt A Gantt chart is a tool used in scheduling and project management and for viewing in time the various tasks a project component.

Slideshow A slideshow is a sequence of images or documents connected by and effects on which it is possible to sound.

Doodle Doodle.com is a website planning and survey of the Swiss company Doodle AG.

GitHub Github is a Web service hosting and management of software development, Git using the program.

Google Docs Google Docs is a result of changes in Google Spreadsheets, word processing software. These programs allow a merged online collaboration.

Google Talk Google Talk is proprietary software and instant messaging service and VoIP Jabber-based and developed by Google.

IRC IRC is a protocol text communication on the internet.

JavaScript JavaScript is a scripting programming language used primarily for interactive web pages.

Login "ID" in French, information enabling a person to identify themselves to a system.

Mailing list In French "mailing list", specific use of electronic mail that allows direct mail information to users who are enrolled.

into production Provision "total" of a service or product.

Ocaml Formerly known as Objective Caml is the most advanced implementation of Caml programming language.

Ocsigen Web development framework, developed by the French laboratory PPS.

Network Mesh of links between different computer equipment allowing sharing of information.

social network Set of social identities, such as individuals or organizations linked together by bonds created during social interactions.

Service Adds value to a product or work required to ensure a company or an individual.

storefront Website composed of a few pages with a company. Allows a company to communicate with the world.

Smartphone With mobile phone also features a PDA. It provides basic functionality such as calendar, calendar, web browsing, consulting e-mail, instant messaging, GPS ...

Android Operating system using the Linux kernel for smartphones, mobile PDAet designed by Android, a startup acquired by Google.

IOS Mobile operating system developed by Apple for iPhone, iPod touch, and the iPad. It is derived from Mac OS X with which it shares foundations.

Windows Phone Mobile operating system developed by Microsoft as the successor to Windows Mobile, its previous software platform.

Beta Test version includes all the features of a program. It is through this version that testers back any problems.

Wiki Collaborative space where users are invited to write papers.