Valais Léo

valais_l

2019

Abstract

My Épita S7's internship has taken place at *BeSport*, a startup developing a social network for sport fans and practitioners. It aims to be the most convenient and inclusive platform dedicated to sport. The objective is to support the every sport (popular or not) at any level—i.e., from local clubs to Olympic and international federations. BeSport counts about two dozens of employees—engineers, researchers, developers, data scientists, sport reporters, marketing and strategy experts.

The whole stack—backend, frontend, iOS and Android applications—of BeSport is developed by making full use of the *Ocsigen project*. It is a french research project, free and open source, first developed at the Irill[1] labs in 2006. I did not worked on the BeSport platform but instead for the Ocsigen project, as the startup is one of its main contributors. The other most important contributors are the Paris Diderot university and individuals from different high-tech companies such as Google or Jane Street.

My mission was to redesign from scratch their documentation toolchain. My internship supervisor was Vincent Balat, head of the Ocsigen project, Cto at BeSport and computer science researcher. The documentation toolchain to be redesigned has gone through several iterations over the years. The very first version was made using *Ocsimore*, a full-featured and generic online documentation manager. When it became obsolete (no one wanted to maintain it due to its complexity), a new, more specialized tool, *html_of_wiki* were developed to keep the Ocsigen documentation available online. However, that tool was not convenient at all. It was neither generic nor flexible at all. My contribution to Ocsigen was then to further simplify html_of_wiki, making it easy to use, flexible and versatile.

[1] L'Initiative pour la Recherche et l'Innovation sur le Logiciel Libre. It is a research laboratory created in 2010 by the famous computer science institute Inria, the Université Pierre-et-Marie-Curie and the Université Paris VII – Diderot.

I worked essentially with Vincent Balat but many people were helpful giving me feedback and improvement ideas—Jérôme Vouillon (Ocsigen heavy contributor working at BeSport), BeSport developers (users of the documentation) and different Ocsigen maintainers who reviewed and criticized my work.

The code base of html_of_wiki have different origins and some parts are more than a decade old! (It means that the programming style is very different and that it contains many hacks now obsolete because of modern language features.) The very first expectation of my internship supervisor was to quickly be able to understand to code base for its most part. Since there my mission involved many modifications of existing code (sometimes with bugs), this first step was perhaps the most crucial one. Another very important requirement was to fully understand the important features to keep to upgrade the toolchain. Indeed, I had to work with years of documentations of many different projects, with different needs, maintainers and users. I also had to plan an effective deployment planning to *smoothly* setup my solution for every project part of Ocsigen. More technically, I was expected to quickly master OCaml because I already worked with this family of languages before my internship.

Ocsigen being an open-source project on GitHub, I was allowed to use my own laptop, which I did. I worked with the OCaml language, on GNU Emacs on Manjaro Archlinux. I used Travis CI to setup a *Continuous Integration/Continuous Delivery* (CI/CD) environment for each project part of Ocsigen. I also wrote a little CSS, tested against the Firefox, Google Chrome, Opera and Apple Safari browsers.

Figure 1 shows the timeline of my work.

*
* *

My internship supervisor was mostly satisfied of my work, which turned out to be more complex and time consuming than initially thought. People in the team were nice for the most part and working condition were very good. Some Ocsigen contributors did not fully agreed on the design I choosed (with Vincent Balat's approval). Their critics were enlightening, constructive and most of the time valid. Fortunately, I addressed all the major issues that html_of_wiki had before my internship. One con-

tributor (which I have met only online) were a bit unpleasant but it is a detail since every other people I worked with were nice and interesting.

The following list summarizes the engineering skills I acquired during my internship.

- Quick integration into an existing workflow.
- Strongly typed multi-paradigm language knowledge (OCaml).
- Understanding of complex needs.
- DevOp job (introduction).
- Deployment planning.
- Note taking.
- AGILE methodology.

I am mostly satisfied with my internship experience: I met nice people, discovered the startup environment and its methodology, I contributed to an open-source research project and learned a lot. I learned about OCaml, had an introduction to the work of DevOp and lead a full deployment of my solution. The major negative point is that I was the only one to *code* on the project. However, every line of code I wrote has been reviewed at least by my internship supervisor and every developer immediately answered every question I had.

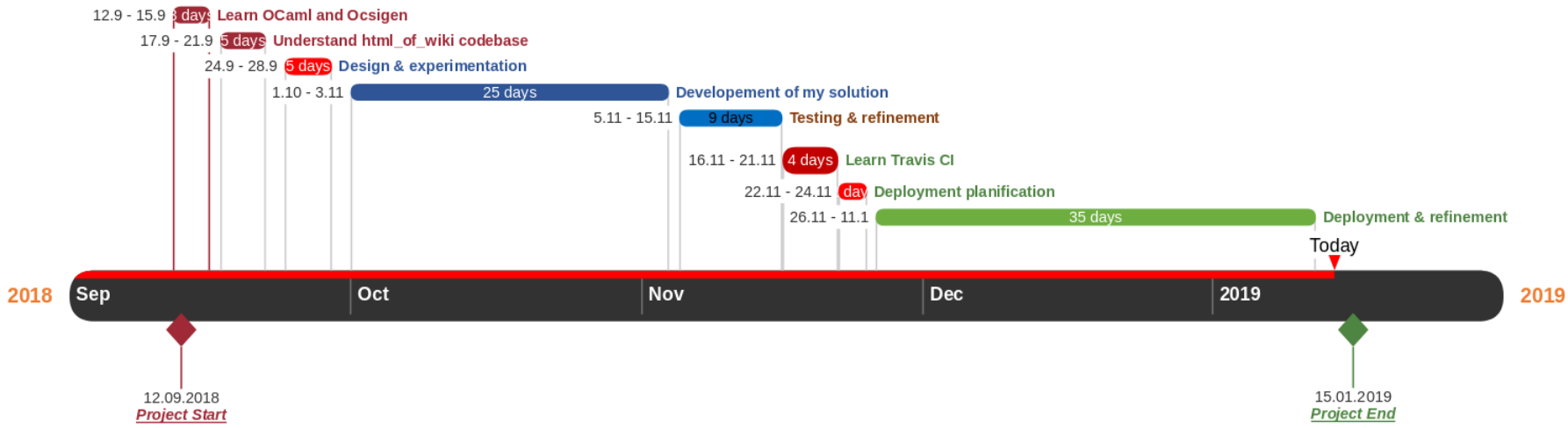

Figure 1: Project timeline