

First Sprint Retrospective, Hike Tracker project (Team 3)

I. INTRODUCTION

This document aims to retrace the work done during the first scrum sprint of the Hike Tracker Project. It will also compare our results to the initial planning we had. We first give some statistics on the User Stories implemented and the time taken to do so, compared with our initial expectations. We then explore the quality measures taken during this first sprint, concerning code testing and reviewing. Finally we will assess our work and the overall organization of the first sprint, and study possible improvements for the next sprints.

II. PROCESS MEASURES

1. Macro statistics

For the first sprint, we planned to implement the first four User Stories, following the given ordering by Business Points, since the functions they refer to are the foundation of the whole application. We successfully implemented HT-1, which consisted in the browsing of the available hikes, and HT-3, consisting in the registration (i.e. sign-up and log-in) features and the creation of role-specific landing pages for the different users, and HT-4, which refers to the possibility of seeing the details of a given hike, whereas we managed to only partially complete HT-2, adding a new hike, and HT-4, which requires the possibility to see the details of any given hike, including its GPS track. This was due mostly to an underestimation of the effort required by the two stories, especially the first one. We also had to spend some time elaborating a coherent organizational structure for the application's software, in order for everyone to be able to work in an organized fashion. Another issue we ran into, and that we decided to defer to the future sprint in order to be able to focus on other tasks, was the management of GPX files.

The stories we chose to focus on for the first sprint are thus the following :

- As a visitor I want to see the list (with filtering) of available hikes, so that I can get information on them (8 points)
- As a local guide I want to add a hike description, so that users can look at it (2 points)
- As a visitor I want to register to the platform, so that I can use its advanced services (5 points)
- As a hiker, I want to see the full list of hikes, so I can get information (including tracks) on them (13 points)

We committed to these four user stories, so the total number of points we committed to is 28. As mentioned, we realized that we underestimated the second and fourth stories, since they posed more challenges than anticipated, especially regarding the management of the reference points and the GPX integration.

As a team, we worked a total of 71h50m, as visible on the YouTrack screenshot below (note that the total time displayed includes 5 hours on 16/11 that refer to the second sprint).

Users ▾		Nov 2022																Nov 2022	
group by No grouping ▾		1 Tue	2 Wed	3 Thu	4 Fri	5 Sat	6 Sun	7 Mon	8 Tue	9 Wed	10 Thu	11 Fri	12 Sat	13 Sun	14 Mon	15 Tue	16 Wed		
Total time	76h 50m	—	—	—	—	6h 00m	—	12h 30m	3h 30m	14h 35m	10h 40m	3h 00m	21h 35m	—	—	—	5h 00m		
Remi Chabrant	15h 20m	—	—	—	—	1h 00m	—	1h 30m	—	3h 50m	2h 40m	—	3h 20m	—	—	—	3h 00m		
Lorenzo Sciara	12h 00m	—	—	—	—	1h 00m	—	1h 30m	3h 30m	1h 00m	1h 00m	—	4h 00m	—	—	—	—		
Gabriele	12h 00m	—	—	—	—	1h 00m	—	3h 30m	2h 15m	1h 30m	—	—	3h 45m	—	—	—	—		
Xiao	11h 00m	—	—	—	—	1h 00m	—	1h 30m	—	2h 30m	—	—	6h 00m	—	—	—	—		
Enrico	14h 00m	—	—	—	—	1h 00m	—	1h 30m	—	4h 00m	1h 00m	—	3h 30m	—	—	—	—		
Matteo Favretto	12h 30m	—	—	—	—	1h 00m	—	3h 00m	—	3h 30m	2h 00m	—	2h 00m	1h 00m	—	—	—		

2. Detailed statistics

| Story | # Tasks | Points | Hours est. | Hours actual |

| #0 (Technical tasks, e.g. meetings, setup, learning new tools and merging) | X | 36h 30m | 30h 50m |

| As a VISITOR I want to see the list (with filtering) of available hikes so that I can get information on them | 5 | 10h | 7h 30m |

| As a LOCAL GUIDE I want to add a hike description so that users can look at it | 13 | 12h30m | 15h 45m |

| As a VISITOR I want to register to the platform so that I can use its advanced services | 2 | 7h | 11h 30m |

| As a HIKER I want to see the full list of hikes so that I can get information (including tracks) | 2 | 5h | 4h |

- Hours per task average, standard deviation (estimate and actual):
 - Estimated: 65h, 23 tasks: approximately 170m(~2h45m) per task.
 - Spent: 71h 50m, 23 tasks: approximately 183m (~3h) per task on average.
- Total task estimation error ratio: sum of total hours estimation / sum of total hours spent - 1:
 $71h\ 50m / 65h\ 23m - 1 = 1.099 - 1 = 0.099$

It is interesting to first note that when evaluating the estimated time for each task, we stray far from the initial “poker” points estimation. The main reason for this misevaluation is that when estimating the User Stories, we don’t always grasp the full scope of the required implementations. Another reason is that certain tasks are useful for different User Stories but only assigned to a specific one. Nonetheless, we did an okay job estimating the tasks for the User Stories as the final spent time is somewhat consistent to our initial prevision.

QUALITY MEASURES

During this first sprint we spent some time learning testing tools such as jest and cypress. We were able to successfully test all the functions of the DAOs and the APIs written for story 1. After the coding part, we also actively verified that everything we had coded was working as expected.

- Unit Testing:
 - Total hours estimated: 3 hours (1h per tester)*

- Total hours spent: 3 hours 30m
 - Nr of automated unit test cases: ~10
 - Coverage (if available): not available
- E2E testing:
 - Total hours estimated: 0
 - Total hours spent: 0
- Code review:
 - Total hours estimated: 6h
 - Total hours spent: 4h

III. ASSESSMENT

- **What caused your errors in estimation (if any)?**

A first issue that caused us to underestimate was the need to set the general structure of the application software. Since we referred to a previous project carried out by one of the members of the team, the others had to take a moment to understand the chosen structure, in order to be able to follow a coherent workflow.

Secondly, we had some initial misunderstandings of some of the requests, which we solved by asking the product owner.

- **What lessons did you learn (both positive and negative) in this sprint?**

We proceeded by subdividing the User Stories' tasks in back-end, front-end and testing, which turned out to be an effective strategy, although, in order for it to work at its best, requires a clear definition of the parameters exchanged by the two ends. We defined them as we worked, which is a somewhat viable option, but in the future we will make sure that the two ends have agreed on them before working, which will allow the members working on their respective ends to have a clear idea of how their code will interact with the other end.

We also found that, as we had planned to do at the end of the last sprint, having a clear definition of data structures as soon as possible helps massively with the development, since it gives us a clear idea of the specific data structures that we need to work with.

We relied on pair-programming, which we found to be an effective tool when a team member has experience with a given task or technology (e.g. someone who already used Jest for testing), as they can help the other learn more and faster.

- **Improvement goals for the next sprint and how to achieve them (technical tasks, team coordination, etc.):**
 - *Trying a different distribution of tasks* based on couples (one doing the front-end, one for the back-end). Each couple will take care of a number of stories and divide them into tasks.

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- Make sure to have *well understood the stories* by asking sufficient questions to the product owner.
- Improving the *branch-merging process* on github, because up to now one person was in charge of merging every branch.
- The difference between *estimated time* and spent time is too large! Key factor for the success of the team is to improve the estimation.