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RETROSPECTIVE (Team 3)

I. INTRODUCTION

This document aims to retrace the work done during our first scrum sprint. 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 future.

II. PROCESS MEASURES

1. Macro statistics

For the first sprint, we planned to implement three User Stories, which we considered to be the key ones of the Office Queue Management project. We managed to successfully implement all of them, even though we might continue working on them to improve the display and perform more tests. It is also important to note that many hours were spent on tasks that are not part of these user stories, but rather general tasks such as learning technologies, defining the API, or even implementing the frontend visuals.

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

- As a customer I want to access a counter in order to receive a service (5 points)
- As a customer I want to know when it’s my turn and where to go (13 points)
- As an office worker I want to notify the system when I’m done with a client (2 points)

We committed to these three user stories, so the total number of points we committed to is 20. We realized during the sprint that we had wrongly estimated the points for certain user stories, as it was much easier or harder to implement them than anticipated.

As a team, we worked a total of 46h48m, as visible on the YouTrack screenshot below. We had estimated 44h10m of work for these tasks. In addition to this estimation was a task that we thought would take 4h, however the latter was not implemented due to other priorities in our code (for example merging).

se2022-03-OfficeQueueManagement

October 2022

Today

Users
group by No grouping

		Oct 2022									
		11 Tue	12 Wed	13 Thu	14 Fri	15 Sat	16 Sun	17 Mon	18 Tue	19 Wed	20 Thu	21 Fri
Total time	**46h 48m**	—	—	—	**4h 30m**	**38m**	**9h 00m**	**9h 30m**	—	**21h 30m**	**1h 40m**	—
Remi Chabrant	8h 10m				1h 30m			2h 30m		2h 30m	1h 40m	
Lorenzo Sciara	8h 00m									8h 00m		
Gabriele	8h 00m						3h 00m	1h 30m		3h 30m		
Xiao	7h 38m					08m	4h 00m	1h 30m		2h 00m		
Enrico	7h 30m						2h 00m	2h 30m		3h 00m		
Matteo Favretto	7h 30m				3h 00m	30m		1h 30m		2h 30m		

2. Detailed statistics

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

| ***#0 (Technical tasks, e.g. meetings, setup, learning new tools and merging)*** | X | 20h 10m | 23h 38m |

| **As a CUSTOMER I want to access a counter in order to receive a service** | 5 | 10h | 7h 30m|

| **As a CUSTOMER I want to be notified when it's my turn and on where to go** | 13 | 3h | 3h 10m |

| **As an OFFICE WORKER I want to notify the system when I'm done with a customer** | 2 | 8h | 6h 30m|

- Hours per task average, standard deviation (estimate and actual):
  - Estimated: 44h 10m, 16 tasks: approximately 165m (~2h 45m) per task. Standard deviation: 135.154m
  - Spent: 46h 48m, 16 tasks: approximately 175m (~2h 55m) per task on average. Standard deviation: 131.824m
- Total task estimation error ratio: sum of total hours estimation / sum of total hours spent - 1: 44h 10m / 46h 48m - 1 = 0.9437 - 1 = -0.0562

The time spent for each of the 16 subtasks is available on YouTrack. It is interesting to see that we had highly misevaluated the time required for the User Stories, as we can see from the difference between the points and actual spent time. This important discrepancy may be due to the fact that most of our work time was focused on Technical tasks, as for this first sprint a lot had to be planned, setup etc. We also believe that we misinterpreted the user story to which we attributed the most points, as the queue management turned out to be much easier than we anticipated. Finally, it is important to note that most User Stories are intertwined, in the sense that one cannot always work without the other. Thus, the time spent on each User Stories might not be perfectly accurate, as certain tasks induced progress in not only one but multiple User Stories.

III. QUALITY MEASURES

During this first sprint we lacked time to perform accurate testing, as we mostly focused on implementing the given User Stories and functionalities. It is obvious that part of this implementation included testing as we actively verified that everything we had coded was working as expected. However, this time was taken on the development rather than having separate tasks for testing. This is a point we need to improve for our next sprint.

- Unit Testing:
    - Total hours estimated: 3 hours (30 minutes for each team members)*
    - Total hours spent: 3 hours (30 minutes for each team members)*
    - Nr of automated unit test cases: 0
    - Coverage (if available): not available
- E2E testing:
    - Total hours estimated: 0
    - Total hours spent: 0
- Code review
    - Total hours estimated: 2h (done by Rémi during the merging of functionalities)
    - Total hours spent: 0

* *Testing time has been included in the development of the various tasks*

IV. ASSESSMENT

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

As we decided to use Firebase as a new technology to substitute the backend, most of us had to learn it from scratch. It is a powerful and easy to learn service offered by Google, still it took chunks of time away from development. Also, the lack of complete initial planning caused a few functions to be rewritten as we opted for a clearer structure for our services.

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

At the beginning of a project, it is crucial to define as much as possible a structure for data. For example (e.g. write a documentation for all the APIs needed and their definitions). We learned how to effectively use tools such as YouTrack to our advantage. By comparing the estimated time to the actual time, we improved our ability to predict how long it will take for a task to be completed. At last, we learned a lot about Firebase, but probably the risk of adopting a tool that none in the group can use is too high.

- **Improvement goals for the next sprint and how to achieve them (technical tasks, team coordination, etc.):**
    - We need to work more on testing and plan tasks including code review.
    - Better initial planning. Specifically, plan which tasks should go first in the sprint, and focus on them so that the subsequent ones have all the necessary elements already implemented.
    - Resolve issues suggested by stakeholders (A counter instead of the ticket ID).
    - Try to anticipate all the “invisible tasks”, such as code merging, bug fixing, frontend visuals improvement, etc. This will allow us to precisely estimate what we can implement in the allocated time.
    - Possibly create tasks for short meetings in order to keep track of everyone’s progress, and have some room for reorganization if a critical problem is met.