<u>Project Review Report</u>

Team Management and Structure

At the outset of the project, our team was not rigidly structured and members did not have defined roles. We were apprehensive to assign roles without any basic knowledge of each team member's specialities, traits and desires in terms of role and responsibility, as we had never worked together before. Beginning the assessment as a formless body was especially effective in allowing team member comfort and relationships to develop organically in a new team and environment, and allow their interests and specialities to shine. We aimed to reach a consensus when making decisions and to distribute tasks according to each member's preference at the time.

Whilst this was functional, we were always sure to remain aware that it was and should not be a long term setup, as there was no rigid way of assigning responsibility for anything. In order to achieve this desired team makeup, we defined group roles after the hand-in of the first assessment; the decision making was largely influenced by the roles that members had naturally begun to assume, however we also carried out research into the Belbin Team role allocation [10] and relevant psychological tests [11] to further substantiate our choices. This meant that we then had a team leader, who could take ultimate responsibility for the allocation of tasks and resolution of any disputes within the team, reducing the scope for any deadlocks that could result in a lack of productivity. The assignment of the rest of the roles helped us to choose which parts of the project each team member would take on, as well as guide the allocation of risk ownership. We found that this structure worked very well, and as such it did not change significantly for the rest of the project.

Whilst we did not deviate from the allocated roles and team structure after this initial change, the performance of our team did continue to improve. Initially, we were operating somewhere between levels 1 and 2 of the CMM [1], as not many procedures were in place but we were a functional team. We quickly ascended to level 3 and by the end of the project we were operating at level 4. Although elements of it were evident, level 5 was never truly achieved, as aspects of the team still were not optimised. However, this is to be expected in a relatively inexperienced team who have never worked together before, and it is likely that our team would further improve given more time.

A version of Scrum was used, but this had to be adapted to our team, as we were not working full time on the project due to a commitment to the rest of the course. The motivation behind this choice was principally the concept of short sprints and regular meetings [2], with the idea that this would minimise wasted time and ensure that the whole team was always working together as efficiently as possible. Rather than having a daily scrum, we had at least 2 meetings per week. Importantly, we kept up 1-2 weekly meetings as a team throughout holidays when we were geographically distributed, although these were done as a group call rather than a physical meeting. In addition to this, more regular meetings were held as required between pairs of team members who were working closely at the time. Some of these pairs employed pair programming [3] while others worked together from different locations, depending upon the preferences of each team member.

Development Methods and Tools

At the outset of the project, RUP [4] was considered, but this was quickly rejected in favour of the more flexible Scrum, as plan-driven methods such as RUP would present much more of a problem in the event of a change in requirements, which we would knew would occur during the project. We also judged that we were more likely to encounter Scrum when working in industry, and so its use during the project would stand us in better stead for future employment.

As mentioned above, pair programming [3] was employed by different pairs throughout the project, particularly during the latter assessments. This was to ensure the quality of the code that was produced and to avoid situations where a single team member is entirely stuck on a problem. This also allowed us to best utilise our team members as we often found it easiest to have only one computer working on the code at any given time to avoid merging issues, especially when much of the work to be done was on the same scripts. This method was more difficult when team members were unable to be physically together, but this was overcome using voice calls and screen sharing where team members felt it was beneficial.

GitHub [5] was used for version control, as most of the team was familiar with it at the outset of the project and it allowed each team member to use whichever client they preferred. We also hoped that many other teams would be familiar with it, and as such it would make transfer easier as and when other teams chose to continue our project. In fact, this turned out to be the case during the handover following the first assessment, so we continued to use Git for the duration of the project. For documentation, we used Google Drive [6], as it allowed for very easy collaboration and, once again, team members were already familiar with it.

To facilitate quick and consistent communication, we used Facebook Messenger [7] to stay in touch and Discord [8] for calls. Messenger allowed queries from any team member to be answered almost instantly. Discord is designed for gamers, but it suited our needs excellently as we could make group and individual calls, allowing us to stay in touch and hold meetings during periods where we could not physically meet. Trello [9] was used to show the allocation of tasks and monitor what needed to be done, as well as deadlines. This tied in with our use of Scrum.

None of these development tools were changed during the project, however at the beginning of each new assessment we discussed our current setup to ensure each member was comfortable and happy in their role. We found these methods to be effective and no significant issues arose with, or as a result of, their use.

During Assessment 2, a large risk to the stability of the project posed itself when a member of our team unexpectedly became hospitalised for an extended period. To mitigate this risk successfully, our team were quick to fill the role left by their absence. Not only this but we made sure to maintain constant communication with the injured member to ensure that when the member was to return to the team, they would be able to quickly and seamlessly assist with the workflow. This was the main risk to our progress we experienced throughout the entire project and as such it contributed a lot to our learning and understanding of why it’s important to have a proper plan to manage risks ahead of time.

Bibliography

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