Task No 3c – Reflection Report

You must provide a final critical evaluation of your work.

The refection section is where you can generalize from specific failures or successes to rules that you or others can use in future software development. What surprised you most? What do you wish you knew when you started? How could you have avoided problems that you encountered during development?

The overall project scope proved very challenging and demanding. Preparing the project plan for this assignment, the nature of the work at hand limited the options in which one can set the task timelines and create prioritization for the project deliverables. While the high-level plan of the application structure (rough class design) was naturally the first task to be worked on, most of the other deliverables had their dependency linked to the delivery of the source code at level where one does not expect major changes to the code, so allowing the work on these products to start.

The application capacity and code complexity proved much larger than any other example experienced during the course so this created the need for considerable research into novel topics. The planned time for this phase of the project was sizably underestimated so negatively affecting the resources available for other deliverables.

The project products mostly reflected the user requirements set in the assignment paper. However, expected range of features and details for some of the project products missed the quality and comprehensiveness planned at pre-development phase. First and foremost, the work on the application source code failed to follow the prescribed, well-tested approach: addressing the unit testing early and frequently. This led to testing tasks being addressed very late in the project, when source code was already finalized. Being that project estimates for the source code delivery were miscalculated, the remaining resources were not sufficient to properly execute unit testing tasks. At this stage, the carried functional testing should ensure that application works as intended. However, any future system enhancement should start from the unit testing being concluded. Secondly, the 2 issues that should also be addressed as part of the enhancements work are a) delivery of the functionality that is not present in this game version (marked as REQ04 of the user requirements testing) and b) refactoring code for some of the methods. Issue A was somehow ambiguous to me so the exact requirement could have been missed (personal interpretation: computer win will automatically result in computer player starting the game), yet for the sake of clarity, I've marked this objective as *Fail*. As for the code refactoring, certain methods displayed code section duplication (e.g. `scoreToken()` for class `ComputerPlayer` but not limited to it) and I feel that further evaluation could lead to cleaner code.

Once again, the inexperience to estimate necessary time for source code resulted in lack of time to correct the system limitations. At that stage, the priorities were refocused to other achievable deliverables of the project, while limitations were recorded for possible corrections in the future.

I believe that number of obstacles encountered in the project simply stem from personal inexperience with certain task complexities, especially the ones that relate to source code development. This fact is not something that could have been prevented through different project preparation and/or better research. On the other hand, appropriate testing approach for unit testing would probably result in larger code coverage than delivered.

Lastly, the functionalities of the game and its supporting artefacts did deliver most of the user requirements so marking the project as success. I enlist the functional game as surely the most complex part of the project. The functional game must be the most satisfying outcome of this project as it hugely tested my capabilities to understand and improve on the OOP but also to tap into depth that Java brings with it…something that on more than few occasions felt overwhelming. The fact that such 'obstacles' were overcome at the end bring feeling of personal success and satisfaction. The undelivered targets are seen as natural path to further knowledge and expertise, so taken as part of the learning curve and as such, welcomed.