## Team Apple – Lessons Learned

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Throughout the development of this project we have come across many challenges and new experiences from which we have benefitted from. For most of our group members, this was a first time programming in C++. Overall, we found that C++ offers excellent management when dealing directly with the stack, input/output, as well as memory management.

This was the first time all of our group members have worked with the Qt Development IDE. We found that it was a little different while getting used to it, especially inserting images and working with layouts, but we managed to understand it rather quickly. Working with Qt and C++ in combination allowed for vast customization in our interface.

As such a large group size we learned how to manage and split up tasks fairly and accordingly to distribute the workload. This was crucial so no member was left without a task and everything could get completed more efficiently. We had some difficulties dealing with integration of the overall strengths of the group. For example, some members were more familiar with data structures and others were more comfortable with designing the GUI elements. The survey we filled out in the beginning was helpful in matching up members with different strengths, but it could probably be a bit more specific in order to ensure a better skill distribution.

Regarding the design patterns of our project, we definitely realized the importance of design BEFORE implementation to save workload in the future. Lot's of code can be rendered as reusable if it is designed correctly. This also entails taking the appropriate time and consideration when preparing design patterns and structured code.

For the future I think smaller group sizes would be sufficient in getting the tasks at hand done. There is only so much work that can be done at one time and with 9-10 people it's hard to manage everything perfectly.