Budgeter Reflective Essay

This essay describes my experiences during the completion process of the Mobile System Development assignment of developing an application for a mobile platform. In this assignment, I developed Budgeter, a budgeting app with the objective of helping students' setup up budgets to manage their funds. Throughout the design and development of this application, various key decisions were made, and this essay will provide a reflection of the lessons learned from these decisions.

When it comes to the tools used throughout the process of designing this application, Canvas was used to create the moodboard to set the theme and PowerPoint was used to create the storyboard from mock-ups created using Appy Pie. Canvas and PowerPoint were easy to use and familiar (Canvas was used to create the moodboard for the Internet Technology module), and only felt limited when it came to layering options. Canvas was particularly helpful, as it provided the basic templates for me which helped speed the design process by allowing to concentrate on setting up the theme colours and images. However, Appy Pie proved to be tedious to use as it would refuse to save designs and was more suited to making functional apps than designs. Hence, for similar design projects, photoshop would be considered to create mock-ups instead to avoid losing designs.

In the development side when it comes to tools, Android Studio was the selected IDE of choice for the application development while Firebase was used to manage the back end of the application (authentication and the real-time database). Firebase was easy to set up, as it just required the addition of a couple of dependencies to the Android Project and its usage was simple and reminiscent of my experience of using Red Bean (allows you to think in Objects not Tables). However, some minor issues relating to Firebase serialising ZonedTimeDate have wasted some development time by forcing me to use a wrapper class. The experience of using Android Studio on the other hand was mixed. While the Intellj core of the IDE was robust, providing great refactoring tools and Git integration, the Android Studio build system which uses Gradle proved to be a hurdle due to bugs and various dependency issues. For instance, at one point during development the Gradle files lost synchronisation with the project leading to various unrelated errors appearing instead of the IDE simply suggesting a clean build. Nonetheless, Android Studio is a crucial part of the android development experience and is featured in various tutorials online which made it hard to avoid.

The design process undertaken in this assignment was like the process undertaken in the Internet Technology module, a moodboard was developed to set the basic theme, a fontboard to setup fonts and colours and a storyboard to outline navigation and mock-ups. These boards helped in setting up the basic design (i.e. mock-up pages and theme), but other documents were used this time as well including personas, user stories and a business case. The business case was used to help understand the basic feature set by studying the competition, but I felt like the personas and the user stories were the most useful additions. These documents are based on fictional users, outlining their needs and objectives. Having these documents made listing features like saving targets a lot easier, as it allows you to think more from a user perspective and less from a developer perspective.

When it came to the development process in contrast, the differences between the way it was handled in this assignment compared to the Internet Technology assignment were a lot more substantial. To help reduce the feeling of being overwhelmed at this assignment same as I was in the Internet Technology assignment, I concentrated on developing features initially through a separate prototype to concentrate on feature and not the overall picture. These prototypes would then be combined once a better understanding of the tools or feature had been achieved. In this assignment, this was done three times, firstly with the development of a basic hello world style application to understand Android Studio basics, then through a login and navigation prototype to help understand Firebase communication and fragments in Android Studio (these two later formed the basis of the project). However, I still felt that some of the development decisions I made could have been improved. For instance, I delayed the decision to select the platform (iOS vs Android) and development language (Java vs Swift) for too long due to fears of one platform being faster to develop for. However, in effect, the delays in decision themselves caused the delays I feared, highlighting the importance of making platform decisions early.

The final product I developed after the development process had mostly met my initial features specified in the design process, however certain features didn't make the cut. For instance, registration was cut out, notifications were removed, and salaries were replaced with credit transactions. I felt that most of the removed features weren't crucial or could be added quickly (e.g. notifications wouldn't be needed as the user would be interacting with the app when they occur, and registration could be added if time was available using Firebase). However, the salary feature removal and its replacement with credit transaction felt like a poor decision in retrospect, as some of the users that tested my application were confused as to where to add currency. Lastly, I felt that the final product wasn't as student oriented as I hoped, as other than the University contacts and posts it felt like a normal budgeting app. I think this could be remedied with early interviews or questionaries' during the design process with the help of other students to get ideas for additional features (e.g. loan funds management), which could have been done instead of simply relying on user personas in early design stages.

In conclusion, this assignment has helped me develop a better understanding of new design and implementation processes like personas and useful development tools like Firebase that I can use in the future. Moreover, it has taught me valuable lessons with regards to management of development processes, like the importance of making platform decisions early and the importance of early requirement analysis through user interviews and questionnaires.