Reflection

Day One Python Client

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Overall I feel that this project was a success, as I successfully managed to integrate a Python application with the Day One iPhone app over Dropbox, with a simple GUI that functions well in the majority of cases. Due to time constraints, there are edge-case scenarios that do not function correctly, however most of the desired functionality was achieved.

The hardest part of the assignment was using external libraries which were often poorly documented and/or incomplete, and this led to a lot of Google searching and a lot of trial and error. The wx documentation was often hard to understand, however the extensive demo application they provide allowed me to find and implement all of the widgets I needed. Interestingly, the best documented library by far was Dropbox – they provided extensive documentation and examples. The Google Maps and OpenWeatherMap APIs were both surprisingly easy to access and integrate.

Implementing the webcam capture was the most time-consuming feature. Initially I was using the cross-platform OpenCV Python bindings, however when this was embedded in a wx.Frame the low frame rate and high CPU usage made the program unusable. After some more research I implemented the feature using VideoCapture, however afterwards I discovered the module was Windows-only. Thus, the webcam feature only works in a Windows environment.

Although I had experimented with individual features throughout the second half of the semester, the bulk of the project was completed very close to the deadline. As such, my focus leading up to the deadline was very much on this project. Although this did perhaps lead to a buggier product than spreading the work over a longer period, I enjoyed the opportunity to focus on a single project and really live in the python world while I worked.

Becoming so engrossed in the project did have it downsides. When I scrambled to complete the documentation, it was the first time I had taken a step back and thought about the overall structure since my initial design brief. I immediately identified several areas that should be restructured, in particular putting reused code into functions and splitting up big functions into smaller chunks for more flexibility and modularity. However, due to my timing, these changes were not viable. This was a valuable lesson that taking a break and a step back can be very helpful.

A bug occurs on exit mentioning a memory leak. Online searches revealed others with this problem, possibly a Python bug? Multiple location searches make the location dialog bigger and bigger due to a funky workaround for image display. Although there are no other known bugs as such, there are several inconsistencies in the operation of the GUI. For example, when changing an entry date, the list refreshes and re-sorts, and now the entry you were looking at is no longer selected. Also, the Dropbox behaviour for a local edit is not ideal. When a file is edited in the program, it is saved locally, uploaded to Dropbox, and then re-downloaded upon the next launch. Due the small file sizes this is not a major issue, however it is not very good design.

If I did have more time I would focus on making a more attractive/functional GUI and testing the application in other environments. These tasks are not incredibly difficult but can be incredibly time-consuming. The program was developed on Windows - limited testing was performed on an OS X

system and no testing in a Linux environment. I also have a list of features that I plan to add in future:

- Delete entries
- Calendar view
- Password protection
- View images
- Load image from files
- Search entries
- Font choices
- A map of all previous entries
- Backup entries
- Export to PDF

This assignment vastly expanded the scope of my programming knowledge, and amazed me with how much I was able to achieve for no cost with commercial APIs such as Dropbox, Google Maps and OpenWeatherMap. It taught me that I do not want to be a GUI designer, but has inspired me to pursue personal programming projects in the future. Working on a project that I will actually use and continue to develop going onwards gave me the extra motivation that I needed with an assignment of this size.