

Expense CLI: A Command-Line Expense Management Program

Kyle Dormer (S1802423)

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1 Introduction

This piece of software is a command-line expense management tool. Its intended purpose is to allow the user to enter their income and their expenses and to have them stored and tracked for them. More specifically, the objectives of the software are that the user should be able to:

- Enter their monthly income, be it from single or from multiple sources.
- Set an overall monthly budget as well as a budget for categories of expense.
- Enter their expenses based on expense categories.
- Add new expense categories.
- View an expense report in terms of day/week/month/year and also with respect to a category.
- Generate and export a graph of their expenses in *PDF* format.
- The expense report should inform the user when they are over/under budget for a specific category in a specific month.
- The expense report should also display the average expense per category.
- These objectives should be achieved using a backend *SQLite* database and with the *Pandas* and *Matplotlib* modules.

In retrospect to the development process, all of these objectives have been successfully implemented and achieved relatively smoothly and without issue. The biggest problems faced throughout the development of the software involved averaging the expenses of the user while generating the expense report. Furthermore, displaying the user's expenses in a nicely formatted fashion in a command-line environment proved difficult, as opposed to implementing a *GUI* solution. The format was solved by designing an algorithm that makes use of Python's concept of *list comprehension* in synergy with the inbuilt *any()* function.

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