

Criterion A Planning

Client and Advisor

My client is an Economics teacher who currently teaches IB Economics in an international school. She will also be my advisor, who will help with ensuring that the program can accurately create all graphs that are taught within the IB Economics curriculum. My technical advisor will be my Computer Science teacher.

Scenario

IB Economics Students often create economics graphs digitally through clunky, slow, and imperfect means. Many are forced to use time-consuming drawing tools or modify pre-existing graphs. Teachers also have problems with utilising economics graphs digitally for teaching, with my own teacher using Microsoft Powerpoint line and shape tools to create graphs for teaching. Furthermore, her (self-admitted) poor drawing skills disable her from creating clean graphs as requested. Clean and accurate economics graphs are essential for Economics IAs, where poorly produced graphs can cause students to lose marks. My client has requested an application that will allow her to create her own graphs, and for students to create their own graphs for their IAs.

Initial Conversation With Client

Reference Appendix for evidence of consultation.

Proposed Solution

I propose that the solution to this scenario is through the creation of an easy to use, automated, economics graph creator program.

To be clear, this program is not designed to be used as a learning tool for theory, as it will not contain any information about the graphs and curves available. Students are expected to hold some level of knowledge about economics and the respective graphs and curves that they plan to use.

This program will utilise a graphical user interface (GUI), whereby students will be able to click to create graph objects, mainly lines and text.

This program will be created for both x86 (Intel) and new Apple Silicon (e.g. M1 Devices) Macs.

This is an IA project as I have learnt basic programming skills through past experience, and I have also learnt how to solve problems independently. I however do not have experience with the Swift language or creating Graphic User Interfaces (GUIs). While my chosen Integrated Development Environment (IDE), Xcode has incredible GUI design tools, I will still need to learn quite a lot. Apple's GUI libraries contain both general and specialised GUI

features, which will increase the speed of development. Swift's multi-paradigm nature also gives me the opportunity to grow my skills as a developer through learning different programming techniques, such as functional programming, and Swift's protocol oriented programming paradigm, also present in Objective-C, which Swift will occasionally interface with internally.

[417 words]

Success Criteria

1. Creating a GUI that is not cumbersome and hence is intuitive to use
2. Be minimal in design, preventing overcomplicated design
3. Assisting students with creating economics graphs digitally, both for homework and their Economic IAs
4. Graphs must be exportable as an image file
5. Utilising error handling to ensure that the program cannot break easily