

Introduction and Background

Much of the information in this report is based off the authors own experiences as a current undergraduate Engineering student.

The COVID-19 pandemic has affected individuals across the world in a multitude of different ways. For many post-secondary students, the method through which they receive education has drastically changed. Different schools, and even different professors are addressing remote learning in different ways. One common approach is asynchronous delivery of material where much of the course content is in the form of pre-recorded videos, textbook readings, PowerPoint slides, or a combination of these. For students, asynchronous delivery has both benefits and draw backs. The increased flexibility of asynchronous learning is useful as students can prioritize different classes when they feel appropriate, however the major drawback associated with this level of flexibility is time management. Asynchronous learning often requires a much higher level of organization and attention from the student to stay on track without the motivation of real-time lectures or tutorials. Time management has taken on a whole new meaning with this added level of independence, and it is something that post-secondary students around the world are currently adapting to.

Problem Statement

Remote learning at the post-secondary level is challenging students in new ways. Asynchronous delivery, an approach taken by many professors, provides students with a new set of challenges when it comes to time management. These unprecedented challenges are forcing students to re-evaluate and take new approaches when it comes time how they are managing their time.

Problem Definition

The goal of the project is to aid students with their time management skills as they adapt and redefine what time management means in the new reality of asynchronous learning. The project should not attempt to manage the students time for them, rather aid them in how to make the best decisions considering the new challenges presented. The solution must satisfy several key constraints in the areas of practicality, accessibility, adaptability, cost, and ease of use. To meet these criterial the solution must be straight forward for the student to set up and use, without consuming a significant amount of time either during setup or use of the solution. The solution must be accessible and adaptable for all students regardless of disabilities, learning challenges, or socioeconomic status.

The project will be considered successful if the solution provides significant value to the user by providing information or suggestions that leads the user to conclusions about their time management that would otherwise have been unobvious to the average user.

Preliminary Design Concepts

Data Oriented Approach to Time Management

The preliminary design solution revolves around a data-based approach. Having accurate, easy interpret, and accessible data available to the student on their time usage is beneficial for determining shortcomings in the students existing time management skills. One example is that despite a student planning how they will use their time throughout the day, they may not follow their plan. Providing the user with real time statistics on how they have been using their time, not just how they planned to use it, can be extremely beneficial.

Desktop Application

This project will implement the *Data Oriented Approach to Time Management* idea into a desktop application. The application will allow the user to set up different tasks and subtask, and then record when they are working on which task. The user can then view statistics about their time usage. The following figures, Figure 1 - Figure 4 below, show initial layout ideas for the main page of the desktop application. These conceptual layout images were developed using Java Swing which is discussed in further detail in the 'Technical Overview' section below.

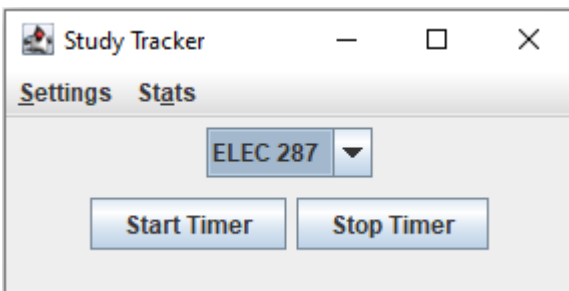


Figure 1 - Application main page

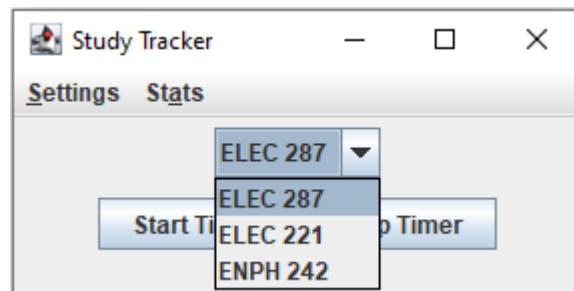


Figure 2 - Application main page showing task selection drop down menu

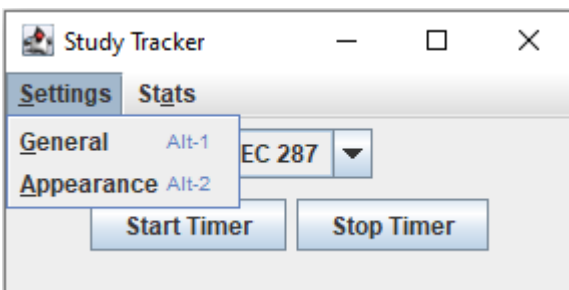


Figure 3 - Application main page showing 'Settings' drop down menu

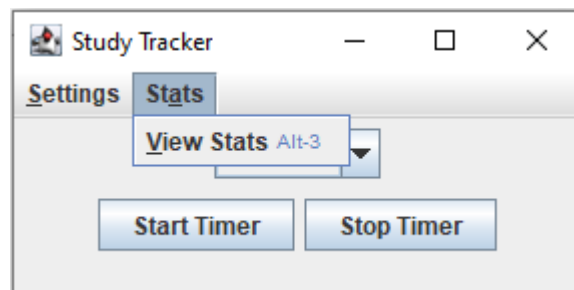


Figure 4 - Application main page showing 'Stats' drop down menu

Technical Overview

This project will be developed in Java to allow for cross-platform capabilities. The images in the 'Desktop Application' section above were developed using Java Swing to demonstrate the layout plan. After further research it was decided that future development of the application would use JavaFX instead of

Study Tracker Initial Plan

Written by Ben Graham

b.graham@queensu.ca

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Java Swing. Although Swing has a larger default set of GUI (Graphical User Interface) components, JavaFX is newer and components have a more modern look [1]. More importantly, JavaFX was chosen due to its built in charting and graphing functionality [2]. This functionality makes it much easier for the application to be developed in a way that provides the user with easy to interpret information.

Project Plan

A first working version of the application is scheduled to be completed by early January 2021. This will allow for the application to be tested a small group of students throughout the January – April semester. Further development will continue throughout the testing period based on feedback from testers.

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Citations

- [1] "Java Swing vs Java FX | Know The 6 Most Awesome Differences," *EDUCBA*, Nov. 17, 2018.
<https://www.educba.com/java-swing-vs-java-fx/> (accessed Nov. 19, 2020).
- [2] "Using JavaFX Charts: Introduction to JavaFX Charts | JavaFX 2 Tutorials and Documentation."
<https://docs.oracle.com/javafx/2/charts/chart-overview.htm#CJAHJCB> (accessed Nov. 19, 2020).