Vision and Scope Document

1. Project requirements
   1. Background

Coursera is a web-based platform that offers millions of unique students online learning opportunities. The StudySync team consists of students pursuing a degree provided through Coursera. Throughout our studies, we have noticed the drawbacks of online-based learning through the web browser. In particular, the ease with which distractions find their way into our study sessions. These distractions mainly come from social media or entertainment websites like YouTube, Reddit or Instagram. Combining the many distracting websites with the inherent freedom of online learning is a recipe for lacklustre study sessions and possibly failure of courses. We see the production of the StudySync web extension as a well-fit solution to this problem.

* 1. Project Opportunity

Coursera serves over 113 million learners worldwide, offering a large demographic to tap into. While building a web extension that caters to all of these students is unreasonable, we have direct access to around 10,000 unique learners currently enrolled in the same program as the StudySync team. The BSc in Computer Science program is offered in cooperation with the University of London. These users display constant frustration with the ease of online distractions and the need for study habit tools provided by Coursera. Our preliminary questionnaire confirms the desire for a tool of this nature. Users are frequently distracted by unrelated websites, need help to focus on their Coursera studies and try to implement a wide array of technologies to mitigate this problem. They also see value in a time tracker, which helps display their study habits' effectiveness by semester.

A comparative analysis is completed in the following section to see the current market solutions and how StudySync will fit within this ecosystem. In brief, the current website blockers perform well and provide many functions to increase the student's productivity. Unfortunately, they all require high upfront setup costs, aren’t built directly for Coursera, and can ask for payment to be of actual use. On the other hand, the time trackers also suffer from the same issues the website blocker does. The lack of Coursera integration is also glaringly apparent here, as users cannot accurately understand their study time per course or task. The high barrier to entry for these solutions also limits the number of students who will put in the effort to solve this problem. With this in mind, combined with the results from our initial user research, we see this as an excellent opportunity to produce a fit-for-purpose web extension with a low barrier to entry. Using an agile development process, solving this problem will be a perfect opportunity for StudySync.

The web extension would limit the barrier to entry by providing base settings that integrate well with the average student’s desired settings. It would also be a free web extension, lowering the entry barrier. Focusing on Coursera integration would also provide a relevant, accurate picture of their study habits on the platform. The web blocker would behave as a whitelist as opposed to a blacklist which would limit the decisions needed by the user. These options would combine to provide the best productivity tool for students to pair with their Coursera studies. The direct access to the degree students is an excellent testing ground to get an MVP product tested, produced and published.

* 1. Comparative Evaluation
     1. Limit

Limit is a web extension which limits the time you can spend on distracting websites, offering a solution to PP-2. It is a lightweight tool that allows users to input problematic websites and set daily time limits. Limit is built on a blacklist in which the onus is on the user to find and declare websites which are problematic to their productivity time.

The extension has the following workflow:

* Ensure extension is enabled.
* Add a website URL they find problematic on the settings page.
* Set a daily time limit on the settings page for said URL.
* Limit tracks users time on blacklisted websites, and if the daily limit is reached, the user is notified they have reached their daily limit.

The extension also helps pinpoint desirable traits for an app of this nature. The UI is simple, with clear, interactive elements and visual distinction to help guide the user through its functionality. The tool does not contain bloatware or unnecessary functionality to further the usability of the extension. It also indicates Limit takes privacy seriously, and the data used by the application is stored locally on the user’s machine without being sent to a database or the cloud. The lack of a paywall also helps user uptake and lowers the barrier to entry.

Limit offers a solution to our project problem PP-2 by allowing users to limit time spent on websites they see as distracting. However, when framed within our desired user class, we don’t see it as a good fit.

To start, the web extension is a blacklist which comes with a high overhead cost to set up correctly. Users must document all websites they see as problematic and write them into the extension. Meanwhile, StudySync would be a whitelist that removes this overhead time by stopping everything by default. The user would then have quick access to add URLs to the whitelist.

Furthermore, the extension still allows access to these problematic sites for a limited time. Users can get engulfed in a task on a given website when permitted. For example, a user is writing a comment to a Facebook post, and Limit jumps in and says the site is now blocked as they have spent too much time on Facebook. The user can get frustrated and turn off the extension to complete their comment. The user then forgets to enable the extension, and their study sessions are again at the mercy of distracting websites. The age-old adage “An ounce of prevention is worth a pound of cure” applies here. StudySync would solve this by preventing access from the start during study sessions. This would stop users from investing in these distracting sites during their study sessions.

Reviewing Limit has validated the need for a whitelist approach to website blocking.

* + 1. Web Blocker

Web Blocker is a web extension which serves as a simple blacklist for distracting websites, offering a solution to PP-2. The extension redirects users to a specified URL when they try to navigate to a blacklisted URL. Like Limit, it puts the onus on the user to find and document problematic websites for the extension to block.

The extension workflow is below.

* Enter the URL to be blocked.
* Optionally specify the redirect link the user will be sent to when accessing backlisted websites.
* Optionally specify a schedule for the blocking to occur.
* Extension redirects the user if the URL is on the blacklist and the time falls within the schedule.

Web Blocker provides all of its functionality with very little user interaction. The user does not need to go through complicated workflows to block pages. The extension does not contain bloatware and contains fit-for-purpose functionality. Much like Limit, the extension would allow a user to get quickly acquainted with its functionality—a vital aspect of these extensions. The redirect option is also a unique solution for blocking the page, but it could lead to confusion as no alert is provided when the user is redirected. Web Blocker also does not hide behind a paywall, which we see as a necessity for any web extension of this kind.

Web Blocker performs well as a blacklist web extension. However, much like Limit, its broad nature and high setup costs leave much to be desired. The user will again have to find and list all problematic pages in the extension. We see this as a high entry barrier in these kinds of extensions. The extension also does not offer a simple on/off toggle to disable the blocker. Users can switch productivity mindsets, and with this extension, it would need to be entirely turned off to allow for that switch. We don’t see this as a good solution, as the extension could be forgotten once disabled. StudySync could ask users if they want it enabled after navigating to coursera.org.

Web blocker has confirmed the need for a whitelist approach to web blocking.

* + 1. WebWork

WebWork is a full-fledged productivity tool which allows companies to track and monitor employee productivity and automate payroll tasks. The web extension provided by the company fits within PP-3. While the features offered by the company are geared more toward employee and company productivity, some features here can be attractive to our target market.

Unfortunately, the extension has many workflows and cannot be briefly broken down into finite steps. However, the application allows users or managers to set a weekly limit to the work that can be completed by the individual in question. The individual can then choose what project, task and information they are working on by inputting it into the extension. WebWork then processes this information, allowing users to see their productivity or use it for reports or payroll.

The simple design of the dropdown menu and task breakdown are great tools which would translate well into StudySync. Users should be able to quickly enter the information they need and be guided toward the correct input area. The many reports and data visuals also benefit the company's productivity market.

When framed within our current market, we see WebWork as an overfit solution for our users. It’s locked behind a paywall, requires a user account, which is very difficult to close, and has a high barrier to entry with all the different options, reports and visuals. Our target market does not want a lot of setup costs, and the complexity of this tool does not lend itself well to that mindset. The tool also asks for a high degree of invasion regarding a user's privacy. Many students are privacy-focused, which can be an off-putting ask. While this tool seems an excellent fit for companies when used within our problem space, it doesn’t correctly solve PP-3.

* + 1. Web Activity Time Tracker

Web Activity Time Tracker is a web extension that tracks users' time spent on websites and stores data for visualizations and output. The extension also allows users to limit time spent on specific websites through a blacklist. The extension provides a solution to both PP-2 and PP-3. This extension is a well-fit, lightweight solution for these problems.

The extension workflow is below.

* Enable extension.
* The extension starts tracking your time on varying websites.
* Users can optionally choose to set limits or whitelist tracking on specific sites.
* Users can then view simple visualizations and export the time-tracking data.

The extension is of quality build, simple in design, functionally sound, and provides instant feedback to users. The visualizations are also well thought out and allow the user to make quick adjustments if they notice a little too much time is spent on a particular website through the pie chart. The extra options enable power users to flesh out the tool further and narrow in on a quality time tracker. This extension has a lot of positive points, and how it displays itself lowers the barrier for entry and provides clear I/O feedback, which is something StudySync should strive to achieve.

While this tool fits the best within our problem area so far, it still has some things that could be improved for our user demographic. To start, the extension tracks pages based on the overall homepage URL, not the specific page the user is on. Therefore, when studying on Coursera, the user is considered to be on Coursera.org at all points. This means the user could only see their total time spent on the site instead of breaking it down by course and task, which fails to meet the user's expectations for a tool that enables Coursera time tracking. The tool also fails in blocking websites as it is like some extensions before it: a limiter instead of a whitelist, which we see as the inferior solution to limiting distracting websites.  
  
This extension is an excellent tool for general time tracking, but our market users want something more catered to Coursera. Using information gleaned from this extension can point StudySync in the right direction.

* + 1. Blocksite

Blocksite is a web extension which enables website blocking via white- or blacklists. It also provided some peripheral information, such as light site tracking. All this provides a solution to PP-2 and somewhat to PP-3. The addition of a whitelist is a great tool which StudySync thinks is the best solution for website blocking. Unfortunately, getting actual functionality out of the extension involves a paywall.

The extension's basic workflow is below.

* Enable extension.
* Add websites to either black or whitelist.
* Extension blocks sites and provides feedback toward new productivity.

The extension is straightforward and functionally sound. The ease with which URLs are added to the blocklist and the feedback the extension provides users allows for a quality tool. The responsive feedback to user actions is also a plus for the extension. Unfortunately, we cannot get an accurate comparison for this extension due to the paywall, and that is the extension's biggest downfall. Free users can only block 3 URLs, which does not meet our target users' needs. Our user questionnaire indicates there are more than three problem sites, and having the main functionality of your application stuck behind a paywall will not attract this demographic. The insights portion is also a cool feature but provides little actionable information.

This extension is an excellent indication of where StudySync can go with simple functionality and well-built UI. But highlights the need to maintain a free extension. Significantly, only some users will pay for web extension functionality, and with our target demographic being so low, that risk cannot be taken.

* + 1. Toggl

Toggl is a time-tracking web extension and company, the most well-known application in web browser-based time-tracking solutions. It provides an all-in-one solution for extension time tracking for all digital tasks. For this comparison, we will only look at the web extension. The tool is a task tracker mainly used by professionals who must bill their time. However, it is so full of features that many different demographics use the tool to help increase their productivity. It provides a solution to PP-3.

The extension is too complex to do a complete walkthrough. However, it allows users to build a picture of the time they spent on a given task. They can categorize activities based on their current project, and power users can further adjust minor details to get genuinely accurate time tracking. The tool lets users output their time to reports or analytic dashboards, which can help paint a quality picture.

The extension has consistent branding and is great for power users. However, we do see it as an overfit for our project problems. Power users may be able to get great functionality out of the application, but it requires a high cost to set up, and our users have courses to focus on. The paywall also limits uptake as our market demographic prefers free-to-access extensions instead of ones behind a paywall.

While Toggl is the gold standard for time tracking extensions, it again doesn’t quite fit our project problems quite as well as a proper solution would.

* + 1. STEEPLE
       1. Social

StudySync is focused on the demographic pertaining to the Bachelor of Computer Science offered on Coursera in partnership with the University of London. Within this demographic, many individuals exist, ranging from industry professionals to recent High School Graduates, all hailing from different countries.

* + - 1. Technological
      2. Economical
      3. Environmental
      4. Political
      5. Legal
      6. Ethical
    1. SWOT
       1. Strengths

StudySync’s strengths will lie in its integration with and development for the Coursera platform. As mentioned above, many tools exist to enhance a student’s productivity. However, none have successfully improved the Coursera study experience to a level that meets our target demographic desires. The current web extensions don’t allow in-depth time tracking or, in many cases, accurate Coursera time tracking. The web blockers are mostly all blacklists or limiters; No quality whitelist exists for students to use.

StudySync will also offer a low barrier for entry by working “out of the box” and only requiring optional further work from the user if they want to go the extra length. The lack of a paywall will encourage more students to adopt the extension. The target demographic will see StudySync’s integration with Coursera and low barrier to entry as a valid solution to the project problems.

* + - 1. Weaknesses

The main weakness the extension has is user attention. While StudySync is to have a shallow barrier to entry, a user still needs to be mindful of the tool to get valuable results out of it. The Coursera time tracker will be based on the current Coursera page the user is on. If the user moves on to a different task, gets distracted or moves on from what the time tracker thinks the user is doing, the data will be valid and accurate. Therefore, reminders, checks, and balances must be implemented to ensure the user is mindful of the tool. This must be done without aggravating the user, which brings us to our next point: uninstallation. Many users desire to increase their productivity, but it’s easy to get frustrated when using any productivity tool, which can lead to rejection of the tool. For example, the whitelist web blocker can increase productivity during study sessions. However, if the user is unmotivated or in a poor mental headspace, they can reject the tool's guidance and either disable it or uninstall it. Thus, the user will need to have a certain level of motivation to use the tool effectively, a variable out of StudySync’s control.

Our team must implement a simple solution that gently guides users toward beneficial outcomes. This solution must also account for the psychology behind procrastination trends and implement friendly UI and features to counteract the innate human desire to procrastinate.

* + - 1. Opportunities

Please refer to section 1.2.

* + - 1. Threats

StudySync’s main threat is rejection by our target demographic. Solving our problem set is excellent, but it’s no use if no one uses the extension. Using an agile development process will keep our project in line with user expectations to ensure there is little gap in expectation between our team and the students. Our team must also know the Coursera and University of London rules/regulations to ensure our extension is not problematic in these entities’ eyes. Another potential threat is the storage of user data on the application. Bad actors could sniff the data through the web browser if the local database is not secured correctly. User data is a crucial area to connect. One potential leak could lead to mass rejection of the product.

The StudySync team must ensure the product matches user expectations, meets regulatory compliance and follows proper extension security practices. This will negate the most significant threats to our web extension.

* 1. Project Problems and Objectives

PP-1: Studying on Coursera is hindered by the complexity of the web browser.

PP-2: Social media sites and other content sites easily distract from study sessions.

PP-3: Coursera does not provide quality feedback regarding students' study habits.

PO-1: Provide Coursera-integrated productivity tools that enhance study sessions.

PO-2: Remove all website distractions from Coursera study sessions.

PO-3: Effectively track 80% of students' study time regarding tasks related to courses accessed via Coursera.

* 1. Success metrics

SM-1: Completion of project within relation to guidelines set by module leaders.

SM-2: User feedback indicates MVP is in line with user requirements.

SM-3: Complete implementation of SRS.

SM-4: Have 100 downloads within six months after release.

* 1. Vision statement

For computer science students enrolled in the program offered via Coursera and the University of London who need help to limit distractions to their studies, StudySync is a web extension that will provide a single point of access to study productivity tools. The web extension will use a whitelist to block all web traffic except for the URLs specified. The system will combine this with time-tracking analytics to provide actionable feedback on the quality of the user’s study sessions. The time tracker will track students' time spent studying during semesters in each class and each specific task within classes. This extension will increase students’ productivity and provide actionable statistics to help guide their study sessions. This enables students to create better study habits and become better students. Unlike the current productivity web extensions on the market, our product will integrate directly with the Coursera website, contain no paywall, and come with out-of-the-box functionality to combine into a low barrier to entry Coursera productivity extension.

* 1. Project risks

BR-1: The team’s other responsibilities (courses, careers) could limit the practical completion of daily tasks. (Probability = 0.7; Impact 9)

BR-2: User intentions could limit time-tracking tools, leading to low usage statistics. (Probability 0.3; Impact 4)

BR-3: Users may prefer to stick with their current productivity tools instead of adopting StudySync (Probability 0.5; Impact 3)

* 1. Project assumptions and dependencies

BA-1: Users will use StudySync properly.

BA-2: Users will allow StudySync to access website information and data.

DE-1: StudySync needs access to the Coursera website to track study time effectively.

DE-2: Users need to know what the time tracker is currently tracking to provide accurate analytics.

DE-3: StudySync needs access to web browser URL searches.

1. Scope and limitations
   1. Features

L1-1: View and update whitelist URLs and settings.

L2-1: Add whitelist settings to the extension dropdown menu.

L3-1: On/off toggle on extension dropdown menu.

L3-2: Add to whitelist button on the extension dropdown menu.

L3-3: Add a whitelist settings button on the extension dropdown menu.

L2-2: Create a whitelist HTML page.

L3-1: Add a form which contains all allowed URLs.

L3-2: Add a save button.

L1-2: Store the whitelist in a persistent state on the local machine.

L2-1: Create a local flat database to store whitelisted URLs.

L1-3: Block all URLs that are not present on the whitelist.

L2-1: Input all URL queries through web extension.

L2-2: Check the URL against the whitelist.

L2-3: Output based on validation.

L3-1: Block the page if the URL is not on the whitelist.

L3-2: Allow the page to load if present on the whitelist.

L1-4: View and update time tracker settings

L2-1: Add time tracker settings to the extension dropdown menu.

L3-1: Create space to indicate which course is being tracked.

L3-2: Create space to indicate which task is being tracked.

L3-3: Create a space that shows the current time tracked in this study session.

L3-4: Add a stats button which links to the time track HTML page.

L2-2: Create a time tracker settings HTML page.

L3-1: Create options to adjust task categories.

L3-2: Create an option which indicates that the new semester has started.

L3-3: Create an option which ends current semester tracking.

L3-4: Depending on user feedback, further options can be added at the project manager’s discretion.

L1-5: Track time spent on Coursera-related tasks.

L2-1: Implement Coursera integration.

L3-1: Track which course the user is studying on Coursera.

L3-2: Track which task the user is completing on Coursera.

L1-6: Store the time tracking data in a persistent state on the local machine.

L2-1: Create a local flat database to store time data.

L1-7: Display data analytics on a data dashboard.

L2-1: Create data visualizations for semester, courses and miscellaneous stats.

L3-1: Visualization can be chosen via user feedback at this stage.

L2-2: Allow users to download stats in standard formats.

* 1. Scope of the agile development process.

INPUT THE GANTT CHART HERE.

* 1. Limitations and exclusions

LI-1: No support will be provided for the Coursera mobile applications.

LI-2: Users must keep a Coursera page open for all time-tracking.

LI-3: Further productivity tools (Pomodoro, etc.) are out of scope for the initial release.

1. Project context
   1. Stakeholder profiles

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Stakeholder | Major Value | Attitudes | Major Interests | Constraints |
| University of London BSc Computer Science Students | Improved study productivity and time savings by limiting distractions. | Receptive to the project throughout development but not overly excited until the final product release. | Successful completion of courses. Implementation of quality study practices. | Extremely busy schedule may struggle to see value in looking into new tools. |
| StudySync (Team 68 Group 6) | Successful completion of CM2020. Combined with the development of essential project management skills. | Strong commitment and enthusiasm related to project development and delivery. | Successful completion of project and course. Quality implementation of well researched project. | Like the rest of the students, the team's busy schedule, combined with the course's timeline, limits the potential of the web extension. |
| Coursera | Improved ecosystem surrounding students and their study time. | No attitude regarding the project unless it breaks their terms of service. | Implementation of a quality online learning platform. Maintenance and inclusion of a quality community of learners. | Their terms of use need to be accounted for throughout the project lifecycle. |
| Dr. Sean McGrath and Module Tutors | No direct benefit. May use success or failure of the overall class to dictate future decisions regarding this module. | Strong enthusiasm throughout project development. Always willing to lend a helping hand. | Seeing student success throughout the course. Providing quality feedback to students. | Their grading scheme and oversight will directly affect what the end goal of the project is. |
| University of London | No direct benefit. Like above, class statistics are more useful to this stakeholder. | No direct attitude towards the project, unless it deviates from a standard delivery. Such as violating program regulations. | Seeing overall student success throughout courses. Fostering a quality environment for learning. | The program regulations will directly affect what can and will be produced by our team. |

* 1. Project priorities

|  |  |  |  |
| --- | --- | --- | --- |
| Dimension | Constraint | Driver | Degree of Freedom |
| Features | All features scheduled for MVP must be fully operational. | Features correspond to a well-fit product for our project problems. Failure to implement features is failure to solve the problems. | If the initial scope and project are finished before the deadline. The team can create further functionality. |
| Quality | The team has agreed to a standard of work which matches upper second class – first class. | Team wished to do well in the class. | The schedule is more pressing than quality. If the quality needs to be adjusted to meet deadlines. Talks can begin then. |
| Schedule | The midterm submission date is January 8th, 2024. The final submission date will be in March. | NA | The schedule between submission deadlines can change based on iterative feedback and development. |
| Cost | The main finite resource the project is dealing with is time. Project needs to be finished within course defined deadlines. | NA | NA |
| Staff | Staff is limited to 5-person team assigned by the University. | NA | NA |

* 1. Deployment considerations

The web extension will be deployed initially on the Google Chrome store to these users only. Our preliminary questionnaire indicates that 71% of the degree students use Google Chrome. The users must have an up-to-date Chrome browser to utilize the extension. The team will have to adhere to the Google Chrome Program policies while developing to ensure our extension is allowed to be listed on the Chrome store. As mentioned, Coursera policies and the University of London’s regulations will also guide how the extension is deployed. The team must also ensure the deployment matches the module leaders' project guidelines.