# Remote Work Discipline App Final Report

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## ABSTRACT

With new technologies and the coronavirus pandemic, remote work has rapidly increased over the past few years. Even after the restrictions from the coronavirus pandemic have been lifted, millions of people continue to work remotely to some extent. However, there are challenges with remote work, so our team is proposing a solution to these challenges, the Remote Work Discipline App.

## 1 Introduction

Although remote work allows more flexibility than working in a normal office, the associated challenges cannot be overlooked. Five examples of challenges that thousands of people face daily while working remotely are distractions, inaccessibility, isolation, lack of resources, and laziness. To elaborate, in terms of distractions, remote workers can be exposed to other family members or pets while trying to work. In terms of inaccessibility, remote workers face more barriers trying to get ahold of supervisors and coworkers when needed. In terms of isolation, remote workers have less face to face interaction and lose opportunities to network and participate in company social events. In terms of a lack of resources, remote workers often do not have sufficient office supplies and space, which decreases productivity. In terms of laziness, remote workers tend to engage in less physical activity, since walking or driving to work is no longer a part of their everyday routine.

With remote work being a fairly new concept, research studies have emerged to investigate the impacts of remote work on the workers. Some studies highlight the negative effects of remote work, including other effects that have not been aforementioned. Working remotely can create “a lack of boundaries between your home and office” and according to one study, “41% of remote workers felt stressed compared to only 25% of those who continued to work in the office. Of the same group, 42% had trouble sleeping, while only 29% of office workers reported the same.” [1] These statistics and all of the other negative impacts of working remotely demonstrate a need for an increase in productivity and work-life balance for remote workers.

A proposed solution to this problem is a Remote Work Discipline App. The Remote Work Discipline App will allow the phone of the user to vibrate and prompt the user to complete tasks that work towards the goal of increasing productivity and work-life balance. The app will have essential tasks built in, such as breaks for exercise and eating nutritious meals and warning the user about distractions, while also allowing the user to create custom tasks and events. The app will also monitor the quality of the work environment, such as by detecting poor posture and unusual room temperatures, and alert the user accordingly.

## 2 Related Work

A related application similar to the idea in this proposal is the Sukha app (formerly known as Centered). [2] This app seeks to gamify task organization through a leaderboard where team members compete for points based on their task completion rates. Based on the work the user is putting in, the app also deploys Pomodoro-like breaks depending on the length of the session, encouraging healthy habits, as well as generally minimizing distractions. This kind of app

encourages the “Flow State,” in which a user experiences a heightened sense of concentration and therefore created high productivity, for a time. [3]

Our app has a few notable differences from Sukha, however. On top of the gamification of task completion we plan on implementing, we also intend to take a little more health-conscious focus to the reminders. In addition to breaks, checks and reminders for bad habits such as poor posture can go a long way in supplementing a healthy work environment. Also, in comparison to Sukha, which charges $10 per month for their service, our app would be free to the public upon release.

## 3 Implementation

Throughout the milestones of this course, Alpha Team has made a variety of decisions that have impacted the outcome of the project. In every milestone, a different feature was considered. For example, one milestone was use cases. Users influenced design decisions, such as how a user would respond differently to alarms compared to vibrations and flashing lights.

One such decision was our choice to focus on an event-based architecture in our high-level design. Due to the time-sensitive nature of notifications being produced by the system in reaction to changes in the time and environment, being able to trigger events in real-time was a necessity. This kind of system also needs scalability, to be able to modify what combination of factors trigger a response of the system, while being able to change them based on the preferences of the user.

For our implementation process, we favor feature-driven development. We have in mind a specific list of features to implement, so we develop a plan and design each feature in detail. From there, we should be able to test each feature in the project, making it immediately available to clients. Once our system has a functional environment, we would be able to move thorough testing.

With a focus on black box testing, we refine our project. We once again care the most about functionality of the system, through which successful implementation would be most clear in testing, for this kind of project.

## 4 Deployment Plan

Our plan is to use CI/CD, continuous integration and continuous deployment. If the course was much longer than a semester, our plan would be to actually implement the app that we created a design for. Then, we can release the app to a small amount of users to gain feedback and insights on how the app can be improved further. Then, existing features of the app would be modified and additional features would be implemented based on the user feedback. Then, a new release can come out a few weeks later. This cycle can repeat, with the number of users increasing with each iteration.

Taking advantage of the canary deployment type would be ideal, in this case. Releasing new features to small subsets of users allows feedback to come in slowly and incrementally, allowing for bad changes to be recognized before the negative affect is felt, and more easily rolled back.

## 5 Conclusion

In the future, our team could go further with this application concept. The current concept works as a mostly closed system, in that tasks are created and destroyed within the app. However, given more time, and a more thorough understanding of the inter-application interactions on a phone, we could simply pull tasks from the user’s calendar and track their progress that way. Just as well, this could have implementation with other task organization apps that are commonplace in the software engineering space such as Jira.

On the other hand, a significant limitation we ran into in planning was determining how exactly to detect environmental conditions. Progressions in AI photography may allow for posture detection and correction, but implementing a feature to detect uncomfortable temperatures in the work environment would require some kind of digital, ideally wireless, thermometer that could transmit that data to a phone on a regular basis. Although this sort of device does exist through, on a larger and more widespread scale, smart thermostats, it would add an extra layer of complexity that would reduce the reach and accessibility of what should be a simple free phone app.

Despite this, there remains a market demand for task organizers for software engineers. With the increased flexibility that remote work offers, modern developers face new challenges that they must overcome if they wish for their productivity to remain competitive with those who are better adapted. By incorporating carefully delivered task reminders, exercise breaks, and comfortability monitoring, our app helps users both stay focused and maintain a healthy work-life balance. As remote work continues to grow in popularity in today’s job market, solutions like the Remote Work Discipline App will give remote workers the push they

need to succeed in a newly blossoming professional environment.

## REFERENCES


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