Studying Alive: An Application for the Wellness of College Students During the COVID-19 Pandemic

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STUDYING ALIVE: AN APPLICATION FOR THE WELLNESS OF COLLEGE STUDENTS
DURING THE COVID-19 PANDEMIC

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Title

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By

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The Supervisory Committee certifies that this disquisition complies with Montclair State University’s regulations and meets the accepted standards for the degree of

M.S in Data Science

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ABSTRACT

Mental health awareness has become an increasingly important topic over the past couple of years due the Covid-19 pandemic. Many individuals find it difficult to discuss their mental health. An individual’s mental health is a significant factor in maintaining their overall wellness. College students, specifically, face various hurdles and challenges that can affect their mental health. They have several responsibilities weighing on their shoulders which can lead to stress, depression and/or anxiety. College students may find it difficult to express these topics and seek healthy ways to cope. During the Covid-19 pandemic, additional challenges have been added onto college students by changing their lifestyles, interfering with their social interactions, and adding extra health precautions. This report describes the development and evaluation of the “Studying Alive” mobile application, which focuses on helping college students manage their stresses, schedules, tasks, and health.
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1. Introduction

Mental health awareness has been on the rise over the past few years. Individuals have become aware of the importance of expressing one’s mental health to inspire others to become more open as well. “With depression a leading cause of global disability and the burden of mental health conditions projected to continue to rise, there is an urgent need for new solutions and tools for mental health” [1]. Innovative methods to address mental health are needed so that there are various outlets available for individuals to cope in a healthy manner. Mental health is a significant problem that requires attention and support, particularly for college students.

College students are in an age where they are finding their identity, while also being exposed to the real world. Transitioning into adults can bring several changes and more responsibilities that can be overwhelming. In a study completed on college students, “among the 2031 participants, 48.14% (n=960) showed a moderate-to-severe level of depression, 38.48% (n=775) showed a moderate-to-severe level of anxiety, and 18.04% (n=366) had suicidal thoughts” [2]. This shows that almost half of the students in the study had a moderate-to-severe level of depression and almost one-third have anxiety, which are a significant amount of the group. College students have the pressure and stress of determining their future occupation, which can greatly impact their future lifestyle. They are pressured to choose a major, which can be difficult and, in addition to choosing their career and having a desire to succeed academically, many college students juggle jobs, internships, and extracurriculars. These responsibilities can pile up and impact their mental health, as well as their physical health. The Covid-19 pandemic added on to these stressors. To alleviate some of these stressors and help college students become more organized, a mobile app called “Studying Alive” was developed and evaluated. The rest of the report describes the development process and evaluation of the “Studying Alive” app.
2. Background

The Covid-19 pandemic began in December 2019 and has changed the lifestyles of individuals around the globe. Several countries went into lockdowns and the world had to adjust their lifestyles to adhere to the new precautions and health guidelines. Several factors such as “greater duration of confinement, having inadequate supplies, difficulty securing medical care and medications, and resulting financial losses” increased the stress and anxiety of the public [3]. Every individual had to limit sociability and take extra precautions such as wearing masks. These changes impacted every individual mentally, physically, financially, and socially.

In addition to these factors that have impacted the general public, college students face several issues, including:

- Maintaining a balance between academic and social lives, grades, remote learning, work, extracurriculars, and other personal circumstances.
- Their academic lives converting to completely online or hybrid classes, which many students found difficult as many professors emphasized independent learning.
- Students not feeling as comfortable asking for help online and being less likely to build a connection with the professor.
- Having limited interactions within the classroom. Often, if students are not comfortable talking to the professor, they may resort to their peers for help. If they do not have the opportunities to build relationship, they may be reluctant to ask for help and may struggle academically and in their overall lives.
In response to the aforementioned problems faced by college students, the mobile wellness application Studying Alive was created to provide an outlet for college students to manage their schedules, discover healthy methods to destress, and improve their academic and social lives while taking precautions against Covid-19. The application also helps improve physical health because physical health is connected to one’s mental health. If one’s physical wellbeing is compromised, the mind will be stressed and affect the mental health. Therefore, the application incorporates various aspects to improve the overall health of college students.
3. Related Work

Currently, even though there are some existing wellness applications, they target the general public, rather than specific groups. It would be more beneficial to college students if they would have an application that caters to their specific needs and addresses their issues. Calm is the most popular wellness app that offers features such as meditation techniques, methods to improve sleep soothing music, and a few other calming tools. In Huberty’s study, it was found that the Calm app lowered “stress, sleep disturbances and self-compassion” with a statistically significant p-value of .001 [4]. This proves that the Calm app is efficient in improving mental health, but it is not specific to college students. It gives tips that generally help an individual but does not specifically take into account the possible problems that a college student may be enduring.

Other mental health applications have proven to also be effective, but they struggle to captivate students and draw them towards using the app. In a survey conducted with 741 college students, “26.1% of respondents were open to using an MHA yet only 7.3% had used an MHA” [5]. This shows that about a quarter of the students would use a wellness application, which demonstrates that they have potential. Increased exposure and creating features that are specifically designed to help college students can help increase the number of students that use a mental health application.

This year, a wellness mobile application for college students called IntelliCare was created. It has exercises that can help the user assess their symptoms, keep track of their moods, learn more about mental health, and provides resources to help the mental health of students. The app has proven to be effective in benefitting the mental health of students, but it had a low uptake within the student community, which may have been due to the pandemic. The
application was designed before the pandemic, so it did not include features addressing issues
that stemmed from the pandemic. Unlike IntelliCare which seems to have a counseling approach,
the Studying Alive app would offer ways to destress, ease anxiety, and manage one’s
obligations, instead of helping diagnose mental health related issues. The Studying Alive
application also addresses Covid-19 and considers necessary precautions to keep the students
safe.
4. The Studying Alive Application: Major Features

The Studying Alive application include nine features, which are Goal Tracker, Schedule, Activities, Routines, Calming Techniques, Recipes, Social Forum, Motivation, and Achievement. The overall appearance of the application was first created as a prototype using a website named Proto.io. This site helps create prototypes easily and efficiently by offering several functions that can be added by just dragging them onto an interface [6]. In the prototype, the outline for each feature was designed, which was used to conduct an informal survey on students to receive feedback on their thoughts of the application and improvements that can be added on.

4.1. Database

For the Studying Alive application, the database used is Google’s Firebase [7]. This database offers an authentication feature that aided the creation of the login page. It stores the information of the application effectively, since the application works with Cloud Firestore, which facilitates the syncing of data and offers support in the application with minimal Internet connection.

4.2. Login/Introduction Survey

The initial screen that appears when the application is opened for the first time offers the option to sign in or to take a personalized survey. The personalized survey includes questions that helps the application learn more about the needs of the user. This can help suggest to the student that they should focus on using certain features. The login page of the Studying Alive application requires an email and password for the user to sign in. If an account has not been
created before, they can register by entering their email and password, which will be stored in the database’s authentication feature. After signing in, the user is directed to the home page.

4.3. Goal Tracker

The goal tracker feature, which is displayed in Fig. 2, was created to help organize the user’s daily, monthly, yearly, and long-term goals. It uses a progress ring to show how many of the goals for each category have been accomplished. This feature is designed to help the user celebrate their accomplishments and acknowledge that any goal accomplished is a victory no matter how small it may seem, such as making your bed or studying for an upcoming exam. When the goal has been accomplished, the box next to it should be checked, which will cause the progress ring to increase in value. This feature’s purpose is to increase the user’s motivation and ambition, while helping them keep track of any upcoming responsibilities and their end goals.
The Schedule feature offers a calendar, where the user can add tasks to specific dates and keep track of any upcoming events. This feature is especially useful for college students as they must keep track of their class schedules and assignments, while also needing to remember the dates of extracurricular activities and personal events. Time management is one of the most frequently suggested coping strategies to help decrease the stress of the academic lives of college students [8]. By improving the student’s time management skills, it can decrease procrastination, which will decrease stress and anxiety. The user can plan out when they will work on certain assignments to avoid being overwhelmed the day before a due date or an exam. It can also help the user plan out their social interactions.

### 4.4. Schedule

The Schedule feature offers a calendar, where the user can add tasks to specific dates and keep track of any upcoming events. This feature is especially useful for college students as they must keep track of their class schedules and assignments, while also needing to remember the dates of extracurricular activities and personal events. Time management is one of the most frequently suggested coping strategies to help decrease the stress of the academic lives of college students [8]. By improving the student’s time management skills, it can decrease procrastination, which will decrease stress and anxiety. The user can plan out when they will work on certain assignments to avoid being overwhelmed the day before a due date or an exam. It can also help the user plan out their social interactions.
4.5. Routines

The Routines feature keeps track of the student’s sleep schedule, eating habits, physical activity, and other daily habits. It can help the student understand their routines or help them develop a beneficial routine, such as getting eight hours of sleep. Sleep is a crucial aspect of one’s health. The body performs various daily functions and needs time to recover. Often, college students can become overwhelmed with their busy schedules and can disregard their bodies’ need for sleep. This feature of the Studying Alive application can help them track routines, such as sleep, so that they can realize if there are any improvements that may be beneficial to improving their mental and physical health.

4.6. Activities

The Activities feature gives the user ideas of various activities that they can do, while still taking into consideration the pandemic. It gives the user a Covid safety score that portrays the amount of exposure that may result from the activity. The feature offers activities that the user can do on their own, and activities that can be done as a group. It reminds college students about the importance to maintain a healthy social life while also maintain one’s academic performance. Students need breaks away from schoolwork in order to care for their mental health. “Social support may have indirect effects on health through enhanced mental health, by reducing the impact of stress, or by fostering a sense of meaning and purpose in life. Supportive social ties may trigger physiological sequelae (e.g., reduced blood pressure, heart rate, and stress hormones) [9]. There need to be a balance between one’s social life and academics, as social interactions can benefit both one’s mental and physical health. Since these activities are covid-friendly, they reduce the fear and anxiety that can stem from the pandemic.
4.7. Calming Techniques

The Calming Techniques feature offers a wide variety of methods to destress and help an individual calm down. These methods can be favorited on the Studying Alive application so that the user can save those methods that specifically helped them. Every method may not be useful for every individual, which is why the app encourages the user to try different techniques.

Progressive muscle relaxation (PMR) is a technique where contracted muscles are progressively relaxed to create a calming effect [11]. This is one of the techniques explored on the app. Deep breathing and controlling one’s breaths can be other ways to relieve anxiety by elevating blood oxygen levels [11]. These techniques are safe and easy ways that a student can learn to remain calm during stressful situations.

4.8. Recipes: Connecting Mental and Physical Health

The Recipes feature offers healthy, quick, and inexpensive recipes for college students. One’s mental health is connected to one’s physical health. If one’s body is physically healthy, it is one less factor that the individual needs to worry about. The diet of college students usually relies on the options that are offered on the school’s campus. It is beneficial for students to learn about the importance of making healthy food choices. In a study conducted with 1956 college students, it was found that increased anxiety is correlated to the consumption of added sugars with a statistically significant p-value of 0.005 [12]. This survey shows that taking care of one’s diet can help improve one’s mental health.

4.9. Social Forum

The Social Forum gives users the ability to share their struggles and current mental state with other users. This gives the college students a platform to express themselves and relate to the stories of other students. The purpose of the Social Forum feature is to form a community
between the users so that they can build each other up and help one another. It reminds students that they are not going through their struggles alone and others are going through the same situations. It also gives the users the ability to share how they have overcome similar situations and give advice. Social platforms can “facilitate social interaction”, grant “access to peer support network”, and “promotes engagement and retention in services” [13]. The feature also allows the users to enhance their social lives by talking to others and possibly finding new friends, while allowing them to vent about their personal struggles.

4.10. Motivation

The Motivation feature has different motivational stories and quotes that will help inspire students to strive for their goals and to persevere through their struggles to achieve their dreams. College students may feel tired from their busy schedules and may need a push sometimes to keep them going. The quotes can help inspire the users to have more ambitions and step out of their shell.

4.11. Achievement

The Achievements feature rewards users for completing certain tasks in the app and trying different aspects within the Studying Alive app. The user can be awarded badges for accomplishing a certain amount of their goals, or just for trying different breathing techniques. The feature’s purpose is to incentivize the user to continue to utilize the app. In “Evaluating User’s Needs in Wellness Apps,” the survey conducted demonstrates that an achievements feature is an essential addition for wellness apps to encourage more interaction [14].
5. Modeling the Studying Alive Application

The overall architectural design of an application is important as it gives the structure and layout of the entire application. It encompasses all the screens, or pages, that are included with the application. The Studying Alive Application has nine features total with several subpages. The overall design of the application reflects simplicity as complex design may take away from the feature’s purpose and distract the user. The application’s simplistic architecture reflects its purpose as it is supposed to be straightforward and easy to use.

5.1. Site map

In Fig. 3, the site map for the Studying Alive application is shown. It shows the nine features that can be accessed from the home page and their subpages. This shows a basic layout of the application. Future updates and modification can include adding features, such as meditation or a journal feature, or possibly adding more subpages within the current features.

![Fig. 3. Site Map of the Studying Alive Application]()}
6. Usability Survey

An informal survey was performed on college students from Montclair State University to gain feedback on the application’s features, usability, and overall appearance. Thirty-six responses were gathered from the survey, which was created on a Google form. This form included a video of the Proto.io prototype of the Studying Alive application. The responses consisted of 2.8% sophomore, 19.4% juniors, 63.9% seniors, and 13.9% graduate students. Most of the students had never used a wellness app making up 72.2% of the response.

6.1. Interface Design Satisfaction

An application’s interface design is an important aspect since it is essentially the overall appearance of the application. It needs to be able to appeal to the users as it is the aspect that interacts with the user. The style needs to be easy to use, attractive to the user, and captivate the interest of the user. In Fig.5, it shows that the informal survey resulted in about 55.5% of the students rated the application’s interface design a four or five, which means they are satisfied.

![Fig. 4. Feedback on user satisfaction for the Studying Alive Prototype](image)

How satisfied are you with the quality of Studying Alive app's user interface design?

<table>
<thead>
<tr>
<th>Rating</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>2</td>
<td>7 (19.4%)</td>
</tr>
<tr>
<td>3</td>
<td>9 (25%)</td>
</tr>
<tr>
<td>4</td>
<td>12 (33.3%)</td>
</tr>
<tr>
<td>5</td>
<td>8 (22.2%)</td>
</tr>
</tbody>
</table>

36 responses
with it. Liew et al.’s survey explains that the three most crucial aspects that are necessary for an application are “Satisfaction, Learnability, and Efficiency.” The feedback from the informal survey indicates that most of the students are satisfied with the interface of the application. Some students suggested that the edges should be rounder and for less colors to be used, which was taken into consideration during the creation of the application.

6.2. Navigation

The navigation of an application affects the user’s usage and opinion towards the app. If an application is difficult to navigate, a college student will be less likely to use it as it can cause frustration and make it difficult to explore all the features. The purpose of the application is to help students destress, so it should not add to the user’s stress. As shown in Fig. 5, according to the informal survey, about 83% of participants rated the Studying Alive application’s navigation as easy or very easy to navigate. Therefore, a majority of participants find the application to be easy to explore and transition between different features. The navigation should not distract the

Fig. 5. Feedback on the ease of navigation for the Studying Alive Prototype
users from the features, but rather, it should help attract the users by making the application easy to use and facilitating their experience.

6.3. Ability to Fulfill Students’ Needs

To make an effective wellness application, it is important to gather feedback on whether the application will fulfill the needs of the user. The wellness application is supposed to be beneficial for the user and help improve their mental health, so the users need to feel like it could be helpful. The success of the application greatly relies on meeting the expectations and needs of the user so that they can feel like there is a need for the application. In Fig. 7, the graph shows that about 78% of the participants rated the capabilities of the Studying Alive application a 4 or 5, which means that they believe the application is overall capable of meeting their needs for a wellness app. There are still some improvements that can be made to further increase that statistic and add other features that college students may need in a wellness application.

Fig. 6. Ability for the Studying Alive Prototype to fulfill the expectations and demands of the students’ desires in a wellness app
6.4. Feedback on the features and their rankings

There are seven total features included in the Studying Alive application, which are Achievements, Motivation, Social Forum, Recipes, Calming techniques, Routines, Activities, Schedule, and Goal Tracker. The students that participated in the informal survey ranked the features of the Studying Alive Application to show which they liked and which they believed were not as necessary. The students ranked the features from 1 to 9, with 1 being the best and 9 being the worst. As shown in the graph, the two features that the students rated the best are ‘Schedule’ and ‘Goal Tracker’. Students found that these two features would be most helpful in their lives, which is understandable as they need to organize their busy agendas and keep track of their goals to succeed academically. The third highest voted feature in the number 1 spot was ‘Achievements.’ This feature can help the students become more self-aware, while rewarding their habits and actions toward improving their mental health. By being rewarded, it will help motivate the students to continue forming beneficial habits and continue working on improving
their health. The lowest rated feature was the ‘Social Forum’ as students were skeptical on its efficiency. Students suggested other features that may be added on future version or updates of the Studying Alive application. Some of these suggestions included a notes section to track one’s daily mental state, yoga, educational features discussing mental health, and daily jokes that can make them laugh. These features can possibly improve the application in the future and can make it more engaging for the users.

6.5. Thoughts on Organization

The organization of an application is crucial to making sure the application is effective and attractive. The user may struggle to navigate through the application and may find it difficult to utilize if the application lacks organization. The user may also become distracted by the inorganization and not focus on the app’s purpose, which in this case, is improving mental health. When students were asked to rate the organization of the Studying Alive prototype in the informal survey, about 80.6% rated the prototype a four or five, which means that most of the

![Chart showing feedback on the organization of the Studying Alive Prototype](image)

Fig. 8. Feedback on the organization of the Studying Alive Prototype
students found the prototype to be either organized or vary organized. However, there were more students that rated it a four, which signifies that there was room for improvement. In the implementation of the application, the students’ feedback was taken into consideration and adjustments were made, such as consistency with fonts and color and easier buttons for navigation.

6.6. Usefulness of the Application

Even though the application has several features that can approve mental health and can be applicable to a college student’s life, it is important to ensure that students find that the features would be useful, or an essential addition to their personal and academic lives. When asked if they features included in the Studying Alive application were useful for their wellbeing, 66.7% gave it a four or five-rating, which is more than half of the participants. However, 27.8% rated it a three, which indicates that they believe it is fairly useful. Therefore, based on this feedback, some features may need to be modified or replaced in the future to make the application as useful as possible for students.
6.7. Usage frequency

The frequency that users utilize an application is a factor in the efficiency of the application. If students are not utilizing the application frequently, they may not be exposed to all the features the application has to offer. The IntelliCare application that was also made for college students had difficulties in getting students to use the application. The application can help individuals more effectively if it is used properly and frequently, especially since it is a wellness application. Wellness applications need constant input to help track one’s wellbeing. The Studying Alive application could be more beneficial if there is constant input in order to track an individual’s schedules, goals, and routines. It is also important to practice destressing techniques frequently to form healthy habits for coping. Based on the informal survey, 52.8% of participants claimed that they would use the Studying Alive application at least occasionally, with only 8.3% of participants claiming that they would never use the application. This shows that most of the participants would at least use the application once, with more than half using it fairly frequently. The Studying Alive application has a wide range of features that can appeal to many different students with various preference in destressing methods. Overall, the informal survey suggests that the usage among participants would be relatively high for the Studying Alive application.

6.8. Additional Suggestions

The survey also allowed students to give additional feedback in an open-ended question to further enhance the application. Several of these comments were considered during the implementation of the application. A common concern that was raised by students was the possibility that the Social Forum feature could have negative effects on the mental health of students. Therefore, the feature will be updated with additional restrictions to ensure that only
positive and encouraging responses are included in the forum. In Fig.10, some of the feedback provided by the students were included. Overall, feedback was very positive and several suggestions, such adding incentives and simplifying the app, were implemented into the application, while others may be added into future versions.

\begin{itemize}
  \item “Make it simpler.”
  \item “Personal journal feature (deleted daily or saved), fitness and diet/calorie tracker”
  \item “Better design. Be wise when picking the colors displayed, and make it match. For example, for calming activity, match it with a color that is calming and so on.”
  \item “Research visual vs auditorial alarms and consider if it is possible to have the app connect with a google home or Alexa to connect with smart lights to achieve this idea.”
  \item To be honest, the social forum is my least favorite feature. It can be a good addition, but social forums and media can also have a negative affect instead of a positive one. It would have to be moderated.
\end{itemize}

Fig. 11. Feedback frequency of usage of the Studying Alive Prototype
7. User Guide for the Current Iteration of the App

In the Studying Alive application’s current iteration, the application first opens with the page to the left in Fig.12. The user has a choice of pressing “Next” to begin a personalized quiz that would help suggest to the user which features would be best to use for their current situation and direct them to the home page. If the user does not take the survey, they can instead directly sign in or create an account, which is shown in Fig.12. Three of the applications features are shown in Fig. 13, 16, and 17.

Fig.12. The Login and Registration of the Studying Alive Application
7.1. Goal Tracker Guide

From the home page, the Goal Tracker feature can be accessed. This feature has four tabs to switch between the daily, monthly, yearly, and long-term goals. There is a progress ring that shows how many goals have been accomplished with a list of the goals at the bottom. On the top right corner, there is a plus sign that allows for the addition of a new goal in the current tab. In the “Create a New Goal” page, the user can write the new goal and when they would like to accomplish it by. This goal will immediately be added into the Firestore database collection designated for the user’s goals. The goal will also appear under the list of active goals.

Fig.13. The Goal Tracker Feature of the Studying Alive Application
7.1.1. Add Goal Button Code

The code for the button that allows for new goals to be added is in Fig. 14 and 15. It uses the GoalViewModel(), which is shown in Fig.14. This class is the bridge connecting the goal feature with the Firestore database. This class gathers the information of the goals and stores it into the database, which allows the function of adding a goal, or a new document, to the “goals” collection of the database. This class works with the interface that allows for the addition of a new goal when the user enters a description and an accomplish date in the page, which is created with the code provided in Fig.15.

```swift
class GoalViewModel: ObservableObject {

    @Published var goal: Goal
    @Published var goals = [Goal]()
    @Published var modified = false

    private var cancellables = Set<AnyCancellable>()

    init(goal: Goal = Goal(title: "", date: "")) {
        self.goal = goal
        self.$goal // (3)
        .dropFirst() // (5)
        .sink { goal in
            self.modified = true
        }
        .store(in: &self.cancellables)
    }

    private var db = Firestore.firestore()

    func addGoal(_ goal: Goal) {
        do {
            let _ = try self.db.collection("goals").addDocument(from: goal)
        } catch {
            print(error)
        }
    }

    func save() {
        addGoal(self.goal)
    }
}
```

Fig.14. The GoalViewModel Class for the Goal Tracker Feature
import Foundation
import SwiftUI

struct GoalEditView: View {

    @Environment(
        .presentationMode
    ) private var presentationMode
    @State var presentActionSheet = false
    @StateObject var viewModel = GoalViewModel()

    var body: some View {
        NavigationView {
            Form {
                Section(header: Text("Goal")) {
                    TextField("Goal", text: $viewModel.goal.title)
                    TextField("Date to accomplish", text: $viewModel.goal.date)
                }

                .navigationBarTitle("Create a New Goal", displayMode: .inline)
                .navigationBarItems(
                    leading: 
                    Button(action: { self.handleCancelTapped() }) {
                        Text("Cancel")
                    },
                    trailing: 
                    Button(action: { self.handleDoneTapped() }) {
                        Text("Done")
                    }
                ,

                .disabled(!viewModel.modified)
            }

            func handleCancelTapped() {
                dismiss()
            }

            func handleDoneTapped() {
                self.viewModel.handleDoneTapped()
                dismiss()
            }

            func dismiss() {
                self.presentationMode.wrappedValue.dismiss()
            }
        }
    }
}

Fig.15. The Add Goal Button Page in the Goal Tracker Feature
7.2. Schedule Guide

The schedule feature can be accessed from the second square on the home page. This feature consists of a calendar in which the user can keep track of their schedule and upcoming events or tasks. They can use the “Add Task” button at the bottom of the screen to add a new event, which will appear on the designated date. When the user presses on a date, the tasks that have been entered for that date are listed when the user scrolls down as shown in Fig.16.
7.3. Activities Guide

The Activities feature can be accessed by pressing the third square button on the home page. The feature contains various ideas for possible activities that students can explore. It contains a description about the activity and how safe the activity may be, in terms of the Covid-19 pandemic. The activities are in three categories, which are solo, group, and outdoors activities. There is a search bar at the top of the screen that allows for certain activities to be looked for, which directs the user to that specific activity. This allows for students to explore new interests, while maintaining their social and creative aspects of their lives active.
7.3.1. Search Bar Code

The code for the search bar, which is demonstrated in Fig.17, essentially allows for the user to type in an input and searches whether the input is in the database for the activity’s category. If the input is not located in the database, the text “No Results Found” will be displayed. If the input is located within the database, then a list of the related information contained in the database is displayed. If one of these activities are chosen, the details of the activity are displayed, which include the description, category, and Covid-19 safety level.

```swift
import Foundation
import SwiftUI
import Firebase

struct SearchBar : View
{
    @State var txt = ""
    @Binding var data : [Solo_category]
    @ObservedObject var solo_Categories = getSoloData()
    var body: some View {
        VStack{
            HStack{
                TextField("Search", text: self.txt)
                Button(action: {
                    self.txt = ""
                }){
                    Text("Cancel")
                }.foregroundColor(.black)
            }
            padding().leading().frame(width: 20)
        }
        .padding()
        if self.txt.isEmpty {
            if
                solo_Categories.filter({$0.name.lowercased().contains(self.txt.lowercased())}).count == 0{
                    Text("No Results Found").foregroundColor(.black.opacity(.1))
                }
            else{
                List(solo_Categories.data.filter({$0.name.lowercased().contains(self.txt.lowercased())})){i in
                    NavigationLink(destination: DetailedSearch) {
                        Text(i.name)
                    }
                }
            }
            .background(Color.white)
            .padding()
        }
    }
}

struct DetailedSearch : View{

    @ObservedObject var solo_Categories = getSoloData()
    @State var txt = ""
    var body: some View{
        VStack(spacing: 15) {
            ForEach(solo_Categories.data.filter({$0.name.lowercased().contains(txt.lowercased())})){i in
                ActCellView(act_data: i)
            }
        }
    }
}
```

Fig.17. The Search Bar code from the Activities Feature in the Studying Alive Application
8. Conclusion

Overall, the Studying Alive application has been created to improve the mental health and well-being of college students. The informal survey reflected mostly positive reactions toward the application, which showed that students would be willing to try this application and are of the opinion that there is a need for such an app. The user interface (UI) design was highly rated, and improvements were made in the implementation to reflect the feedback from the survey, which included limiting colors, maintaining consistent text formatting, and including rounded shapes. The three most highly rated features are Schedule, Goal Tracker, and Achievements. As the Covid-19 pandemic reshaped life and affected several individuals, college students need help to cope with all the new changes and anxiety. New methods of learning, limited social interactions, personal situations, and academic progress are all stresses that college students are currently juggling. The Studying Alive application can help ease the stress of all these factors and alleviate the pressure endured by college students. For the future, the application may need to add certain features or conduct certain modifications before being made public. There may be some additional changes that will be made once other students start using the application and provide more feedback. A larger survey may be beneficial to gain more insight on any possible changes that should be made. The application may need some marketing / promotion from universities to help encourage more students to try the application once it is made public. Currently, some modifications and updates are being added to the Studying Alive application to ensure it can accomplish its purpose of aiding the mental health of college students.
REFERENCES


