Campus Bliss: Requirements Document

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Introduction - Giovanna

This document contains the system requirements for Campus Bliss. These requirements have been derived from several sources, including The University of Pittsburgh and Syracuse University.

Types of Reader

Project Manager
The project manager should read the entire document to understand the full scope of the project. They need to understand the time, cost, and scope of the project to ensure it is feasible and will output the highest possible quality.

UI/UX Designer
Understanding the operations of the app are essential for providing the best experience for the target audience. Therefore, these individuals should read the *Product Functions, User Characteristics* and *User Interface Requirements.*

Software Development
We recommend reading the *Product Functions, Specific Requirements (especially System and Integration Requirements)* and *User Interface Requirements.* These areas will provide the best knowledge pertaining to system architecture and integration details. Having these details will assist the developers in meeting the ideal coding requirements. These positions will be required to have knowledge in Javascript, HTML, and CSS.

Quality Assurance
User Requirements and *Availability* sections will provide the best insight while this team validates system performance.

System Architect
In order to ensure the longevity of the system and provide long-term support, the architect would find the best information in the *Sustainability Requirements.*

Legal Team
Constraints, *General Description,* and *Functional (User) Requirements* would need to be looked over by this team. One reason for this is that the application involves discussion pertaining to mental health and this information must be up to standard legal and regulatory requirements.

Marketing Team
In order to best cater to the desired user market, the marketing team should consider the *General Description, Product Functions, User Characteristics,* and *Functional Requirements.*

Cybersecurity Compliance

System and Integration Requirements and *Constraints* should read these sections. This is in order to ensure that risks and vulnerabilities are managed. If there are any potential risks, guidance and instructions will be needed to mitigate them.

End Users/Customers
While not directly involved in the creation of the application, the target audience should read the *General Description, Product Functions, and Functional (User) Requirements.*

Technical Background Required
The General Description is written to provide digestible information for readers of all technical backgrounds. However, sections with high-level vocabulary such as *Availability and Performance Requirements* will contain language that is later defined in the Glossary. Additionally, roles we suggest reading those sections are more than likely previously familiar with this terminology.

General Description (Kevin)

This section will give the reader an overview of the project, including why it was conceived, what it will do when complete, and the types of people we expect will use it. We also list constraints that were faced during development and assumptions we made about how we would proceed.

Stress, depression, and anxiety is a major problem that many college students face. The causes for students' mental degradation comes from a number of factors; academics, money, social life, and workload. Studies have shown that 66% of student have reported stress, 44% have reported symptoms of depression, 37% have reported symptoms of anxiety, and 15% have stated that they have considered suicide [1]. As stated before, students financial situation is a major cause of students mental health degredation. Tuition, cost of living, and food insecurities is a major cause of stress for students and studies show that 60% of students suffer from stress because of tuition, 50% suffer from stress because of monthly expenses, and 20% of students suffer from stress because of food insecurities [3]. As a team, we saw that this was a major problem and there was a lack of resources that help students overcome these issues. We wanted to create an application that is an all in one to help improve students overall quality of life and help give them tools that can help improve their experience in school.

Upon completion of Campus Bliss, our application will be able to be used by all students and help improve their overall college experience. Our application will help students learn different time management and budgeting skills as well as provide tools to help budget and manage their time. With our application, it will act as a mentor to students to help them learn these necessary skills and help adjust to being on their own.

Product Functions (Kevin)
Campus Bliss is an application that can be used by college students that helps support them overall, with their financial needs, time management skills, and budgeting skills.

1) Have access to student assignments and due dates
2) Provide budgeting techniques tailored to specific needs
3) Provide time management strategies to students
4) have a customizable calendar for students assignments, personal use, and miscellaneous activities

5) Provide budgeting tools to help students for their specific needs
6) marketplace for students to trade and sell used goods

User Characteristics (Kevin)
We expect Pitt students of all grades to use our application. These are students from 18-26 in their undergraduate, masters, and PHD programs. The students using our application will not need any technical background and the application will be very user friendly. Students will want to use our application because it is an all-in-one solution that will help guide and mentor them throughout their college journey. The students using our application will not need any specialized skills needed but some obstacles they encounter will be getting used to our application and tailoring it to best fit them. The learning curve with our application will be for a student to work with the settings, such as when they want notifications to come up, how far in advance would they want to see upcoming assignments, and color schemes of assignments and other things they want shown on their calendar.

Constraints
There are many possible constraints within our application that need to be identified. The first of these constraints is technology and system constraints. These include platform compatibility for the application, which systems it runs on, how do the updates of the system interact with the application. We have identified these constraints and plan on using cross platform development frameworks that ensure maximum compatibility with various operating systems and staying up to date with them. Another technological constraint is scalability and how our application will handle increased traffic and users. Our solution is using cloud-based solutions such as AWS that drastically increase our applications capabilities and traffic handling. Other technological constraints include implementation with university systems which we will access through using system APIs in order to ensure seamless integration for the user and a smooth flow of data that stays updated. There are legal constraints as well, these include compliance with standards like 508c in order to provide usability for students with disabilities. Other constraints include adherence to data protection laws like GDPR and CCPA which are crucial. The application must ensure user data confidentiality and provide clear privacy policies. Another constraint is complying with HIPAA regulations since the application includes health related advice and mental health resources.

Assumptions and Dependencies
The assumptions we have made through the creation of our application is that the user base is going to be college students, who are able to proficiently use technology and access the application. The application assumes stable and reliable internet connection for users to use online features. We assume that our team has access to necessary tools and environments to keep the network running and updated, including access to APIs for student data and sites. The dependencies of our application include university cooperation and help from university IT to work with us in collaboration for access to student web based learning software such as canvas. Another dependency is a skilled team that has the skills and resources to develop this application and while keeping it updated, adding new features and patching bugs. There would also be other teams necessary including legal teams, UI/UX designers and a security and data protection team. The last dependency is hosting the application on a sufficient cloud infrastructure that can handle basic functions and storage of the application given a certain number of users.

Specific Requirements
This section of the document lists specific requirements for *Campus Bliss*. Requirements are divided into the following sections:

1. User requirements. These are requirements written from the point of view of end users, usually expressed in narrative form.
2. Availability and Performance requirements.

3. System and Integration Requirements. These are detailed specifications describing the functions the system must be capable of doing.
4. Sustainability Requirements
5. User Interface Requirements. These are requirements about the user interface, which may be expressed as a list, as a narrative, or as images of screen mock-ups.

Functional (User) Requirements (Jerek)

List Upcoming Assignments/Events/Exams (Calander):

The function of this feature is to help students manage their assignments and events efficiently. This feature would be a seamless integration with university websites/applications to streamline the scheduling processes that students often face. Offering a streamlined space that includes all of the calendar/schedule features present in other apps into one space. Some examples of these websites include Canvas, BlackBoard, and Google Classroom. This feature is useful to those who have not learned the skill of dissecting and effectively dividing their time.

The calendar itself would take inspiration (visually) from other calendar applications such as Google Calendar. After the automatic data synchronization from your school's website, the assignments and their due dates (along with the events and exams, etc.) will be listed, color-coded, and filtered (see functional requirement for *filters*).

This feature will also address privacy concerns and can be completely customizable without the use of school website integration. If the user feels they are unable or unwilling to provide their log-ins to their school websites, they are able to customize their calendar manually by using the creation tools provided by Campus Bliss.

Use Case: *Jeremy is a senior pre-med student at the University of Pittsburgh. Coming from a low-income household, Jeremy finds it necessary to work a part-time job to try to relieve the financial burden of school from his parents. He often finds himself working late shifts and returning to a mess of assignments that he never organized. Lost within his own mind, Jeremy stumbles upon Campus Bliss**.** Jeremy links his school's Canvas account to his Campus Bliss application and within seconds has a clean and effective calendar to use. The stress of organizing his assignments is lifted off his shoulders and he can continue working hard to get through his senior year.*

Developing Budgets:

The function of this feature is to use an algorithm and resources online to enhance or develop a student's budget based on their individual needs. More than often, college students are faced with immense financial stress which deteriorates their mental health and quality of life. With the use of this feature, Campus Bliss will provide each user with an automated budget encouraging them to spend money efficiently and wisely.

Use Case: *Sarah is a rising sophomore at a state college. At this college, a meal plan is only provided to freshmen. Although coming from a middle-class family, Sarah is beginning to get restless and stressed about how she will be able to afford groceries, rent, and other necessities amidst the rising cost of tuition. Sarah found Campus Bliss through a friend and began to use its budgeting tools to relieve the weight of finances from her shoulders. Since using this feature she has spent more time focusing on assignments than worrying about financial burdens.*

Notifications:

This feature will notify the students of their upcoming assignments, due dates, and day-to-day tasks based on their calendars (provided by automation or manual integration). Push notifications can be accepted by the user upon account creation and this setting can be adjusted in the future in the settings section of the application.

Some of the adjustments that can be made are banner styles, badges, timing separation, and other basic notification settings. These settings can be adjusted to the users liking to provide them with the most enjoyable experience possible.

Use case: *Alexis has trouble remembering every detail of her busy life. She is involved in multiple organizations on top of being a STEM student at a prestigious university. Normally, she struggles with due dates, however, using Campus Bliss Alexis gets notified the night before, an hour before, and 5 minutes before every assignment is due. She customized the notification feature to her liking and has since had a 0.35 GPA increase.*

Filters for Organization:

Filters are used throughout the application, within almost every section, to provide organization and structure to each section respectively. An example of the use of the filter would be within the *Calendar,* using the filter to separate assignments by class. This would allow the user to view assignments and dates pertaining to only one specific class. This alleviates the stress of having to view multiple classes or sections at once.

Use Case: *Francine is excruciatingly busy this semester. In order to graduate on time she enrolled in 6, 3 credit classes. She is also a part of 4 organizations on campus and all of these different tasks pile up over time. Thanks to Campus Bliss, she can filter her calendar to show the tasks for one class or organization at a time. After implementing this tool into her life she has felt less stressed out and can focus more on her assignments.*

'Marketplace' Page:

This feature provides a location within our application for users to trade items or services to another user in exchange for their goods or services. Essentially, the application provides an area for bartering. One of the main struggles affecting a college student's quality of life is the inability to spend a large chunk of their budget on unnecessary items. This section of Campus Bliss is providing a way for these students to trade what they already have, for something they want. With the implementation of AR (augmented reality), students can upload high-definition pictures and videos of their goods, and interested users can view them virtually in their rooms, on their bodies, etc. When a user finds an object or service they are interested in they can "bid" on said item/service. The user then waits for the user who listed the item to view all available options posted in the bids section and decides which they would like to trade their item/service for. This creates a space where both users in a transaction can end up satisfied.

Use Case: *Samuel has been collecting shoes all throughout his high school years. Once he came to college he realized he had no room for his whole collection and wanted to get rid of some. He didn't want to sell them, because the process was too long and tedious, however, he noticed he needed some new pants and saw an ad on YouTube for Campus Bliss and remembered the part about their bartering marketplace. He used the application to reach out to a fellow student who was looking to get rid of a few pairs of pants. They met up in a public location on campus and traded their goods, both happy with the experience.*

Profile Creation:

This feature of Campus Bliss takes inspiration from most social media platforms on the market today. Allowing the users to create and customize their profile to their liking with ease. This includes privacy controls, profile pictures, banners, and many more tools to personalize their profile to their liking.

Use Case: *Personality expression is something that is very important to Dianne. She grew up as a student at an art school, and after moving to college, she has found it hard to find places where she can express herself well. Campus Bliss's profile section provides a space for Dianne to express her interests and "vibe" with no hesitation or judgment. Dianne is very satisfied that she has this space to express herself.*

Mental Health Resources Page:

The function of the Mental Health Resources page is to provide students in need, the extremely valuable resources near their location to improve their mental well-being. The immense stress of college classes, social lives, and other environmental factors can often become overwhelming to a student. These feelings are more than often overlooked which leads to further issues down the road. The goal of this function within Campus Bliss is to alleviate this stress, push the students towards the help they need, and lower the risk that comes along with these factors.

Using outside resources and references Campus Bliss will integrate virtual therapy resources directly into the app. Provided financial support from investors, integration with applications like better help could come in the future. For now, student health advisors and therapists can apply for jobs within the Campus Bliss application. Outside of therapy tools, resources for other mental health tools will also be provided within this section of the application. Leading to an increase in positive mental health for our users.

Use Case: *The stigma around men's mental health has negatively impacted John's quality of life. He constantly finds himself devoured in anxiety and depression, yet feels as though he has no means to express these feelings considering he is always surrounded by emotionally unavailable friends. John stumbles upon Campus Bliss and decides to take a look. As expected, the calendar features help relieve some stress off his shoulders but he still finds himself struggling to accept his feelings. Then, he finds the mental health resources page. He uses these tools to reach out to a therapist in private and finds his mental health begins to elevate quickly through the coming months. John is now feeling less anxiety and happier within his own mind thanks to the help of Campus Bliss.*

Availability and Performance Requirements (Jerek)

Being that our application is being introduced on college campuses, we anticipate that after a few weeks of catching traction, the app will be faced with a plethora of users. In order to maintain an enjoyable environment on our application we must address these availability and performance requirements.

Server Hosting:

The implementation of personal and powerful server systems is essential to the success of our app. Due to the application being free and ad-free, we need an inexpensive option to host our application. There are mainly two options when it comes to hosting servers, one being *shared hosting* and the other *dedicated hosting.* While cloud hosting is more efficient and powerful, cloud hosting tends to be more expensive. Therefore, for the majority of the start-up process, we will be spending our money on dedicated hosting until the app gains more traction.

Differences between Cloud and Dedicated Hosting: A dedicated server, according to *Rackspace Technology* is a "physical server that is purchased or rented entirely for your own business needs. Dedicated servers are typically used by large businesses and organizations that require exceptionally high levels of data security, or organizations that have steady, high demands for server capacity." On the other hand, cloud server hosting is multi-tenant, meaning that multiple instances of the service are running on a

server at once. The importance of using a dedicated server extends past the fact that cloud hosting is more expensive. Using a dedicated server allows our product to run in one instance, on one server at a time, allowing our team to maintain updates frequently and effectively.

Maintenance and Updates:
The effectiveness and success of our application are based solely on the performance of the application, without proper control and care for our product, it will not succeed. A recent Velvetech article, published in 2023 explains the importance of application updates stating, "You can build a trail of loyal users from your app updates. That is if they contain bug fixes and new features that users may have requested. The frequent updates mean that you care about your mobile app maintenance as well as reflect your commitment to meeting user needs."

The importance of updating your application derives from reducing the amount of uninstalls. To increase not only profits but also customer satisfaction, a well-run application is important. The Velvetech article also states that the goal of an update can be a combination of bug fixes and new feature additions. It is important to increase customer satisfaction by removing negative bugs and adding new features periodically. As a team, it is our responsibility to read the reviews on our application and apply ourselves to fix all issues addressed in such reviews.

Another aspect of updates within a mobile application is to provide usability to changing OS features. With the rapid development of operating systems, such as iOS, Google OS, and Android OS, there are thousands of tweaks and additions every year. It is crucial for our team to address these changes and make our application function within these environments smoothly.

Execution:
The application will have an execution time of, at maximum, 1 second. This run time is currently the industry standard and we will hold ourselves accountable for maintaining this standard. Our users should be provided near-instant feedback to their button presses and other actions. If they are gaining access to information that information should be provided instantaneously.

Internet Connection:
Users and hosts are required to have a strong Wi-Fi connection or a strong (generally above 100 Mbps for this is the industry standard) cellular connection in order to use our application as it requires being connected to our servers at all times in order to function. Within the circumstances where a user does not have sufficient internet connection, they will be provided with an error message and directions on how to fix this issue.

i.e. *Error Connecting to our servers. Please check you are connected to the internet.*

System and Integration Requirements (Jerek)

Operating System Integration:
Campus Bliss will be available on iOS, Android, and Google devices. Making this app available for a majority of the mobile devices on the market will allow our product to be used by a variety of users. Campus Bliss will run natively on Apple devices using iOS 13 or later. For our Android users, their devices must be running on Android 6.0 or newer and available on the Google Play store. Google devices using Chrome OS will also have access to our application.

To cater to our web-based-only users, we will have a website active 24/7 as well. This website will be enhanced and optimized for the major web browsers such as Google Chrome, Firefox, Safari, Explorer, and many more.
Our servers will have support for APIs used by the website and mobile application counterparts. At Campus Bliss, we strive to provide streamlined, fast, and easy-to-use services to all of our users regardless of the platform they choose.

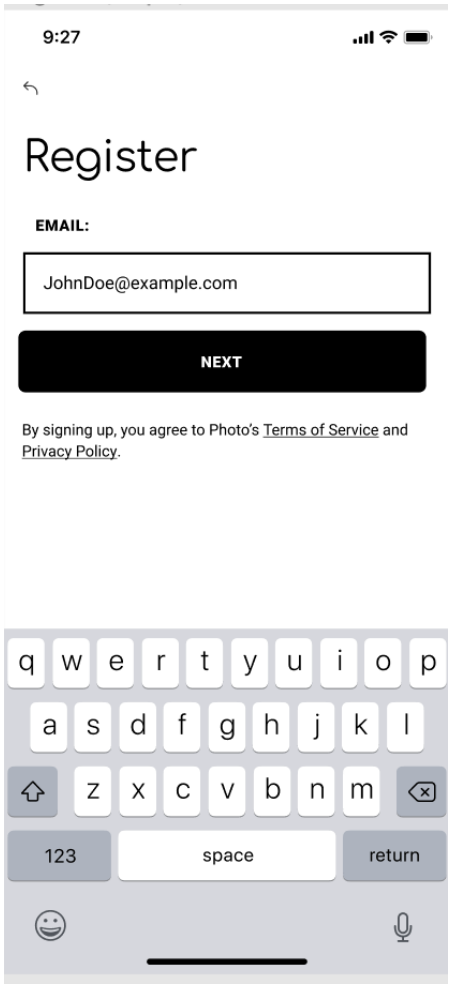
Sustainability Requirements (Laiba)

In order to support and maintain our system, we will provide customer support 24/7 so when a user has any issues with the application, they are able to get feedback through email, chat, or call. In our app, there will be a chat box for students to access any questions and get a response through artificial intelligence. We will also be implementing analytics tools such as Tableau and New Relic to gather insights into potential issues that might arise and track monthly performance to make sure that we are on the right path and people do not encounter any challenges in the near future. If we see a drop in the number of people that use our application, we will look more closely into what feature or issue caused this and work on improving the system. Another challenge that we will be preventing is data loss. We will weekly backup data so users can have access to any information that they might have accidentally lost. For example, if a user deletes an assignment that they thought they turned in, they are able to go through the past assignments that they turned in and recover it.
In order to build scalability, we will have Azure or any cloud infrastructure to ensure smooth user experience. In addition, we will do load testing to see the amount of users our application can handle and see the behavior of the software under various conditions. We assume that at the launch of this application, we will have all students from University of Pittsburgh try it and have the app be advertised by those students to their friends. We can see the amount of users increasing exponentially as this application gains more attention. It is a platform that can be used by students from different universities. We will most likely start off with a small number of students which will allow us to detect issues and bugs that might occur. Based on the population of Pitt students, we can expect around 33,771 users to use this app (“Fall 2023 Enrollment Numbers Increase Slightly; Applications Set Another Record”). Thus, we can estimate that those students will start using the app right after the release which has the possibility of turning into over 100,000 users. According to a research (Muniz), there are around 19 million college students in just the U.S, so this app has the possibility to grow very large. In the case that there are many change requests, we will evaluate the urgency of the matter and the amount of users that asked for the same changes. Those characteristics will give us a timeline of how long we have to mend it.

User Interface Requirements (Laiba)

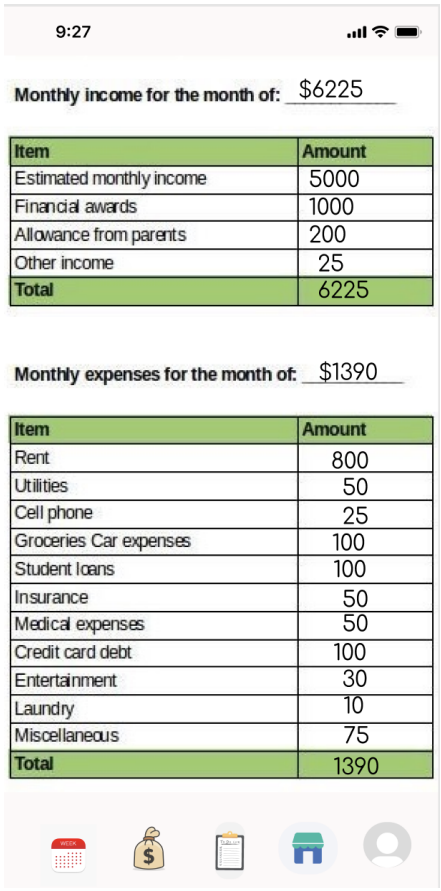
Our product is designed with an intuitive simplicity that seamlessly adapts to the diverse digital landscapes of mobile phones, tablets, and laptops. For our mockups, we decided to show a mobile version as we feel that a student will most likely use the application on a phone more often as it is more convenient. In essence, our product doesn't just aim to be user-friendly; it aspires to be a digital companion that effortlessly caters to the unique needs and preferences of every user, fostering an inclusive and accessible experience across devices.

THE HOME SCREEN: When a user first opens up the app, they will see the following screen. The background is blurred so it focuses more on the wordings. The background picture was selected with careful consideration. The clock is there to showcase one of the main goals of this application which is to manage time carefully as a college student. As shown, there are two options: Log In and Register. The Log In is for users who already have an account, this also enhances security by asking the user to input their password in order to access their information. The Register button is there for students who want to log in for the first time.

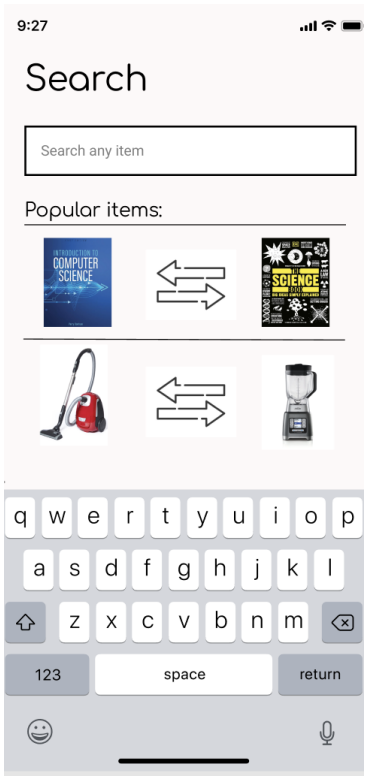


The Register Page: This is for students who are new to the application. They are asked to enter in a valid email and also told that they are agreeing to the Terms and Conditions.

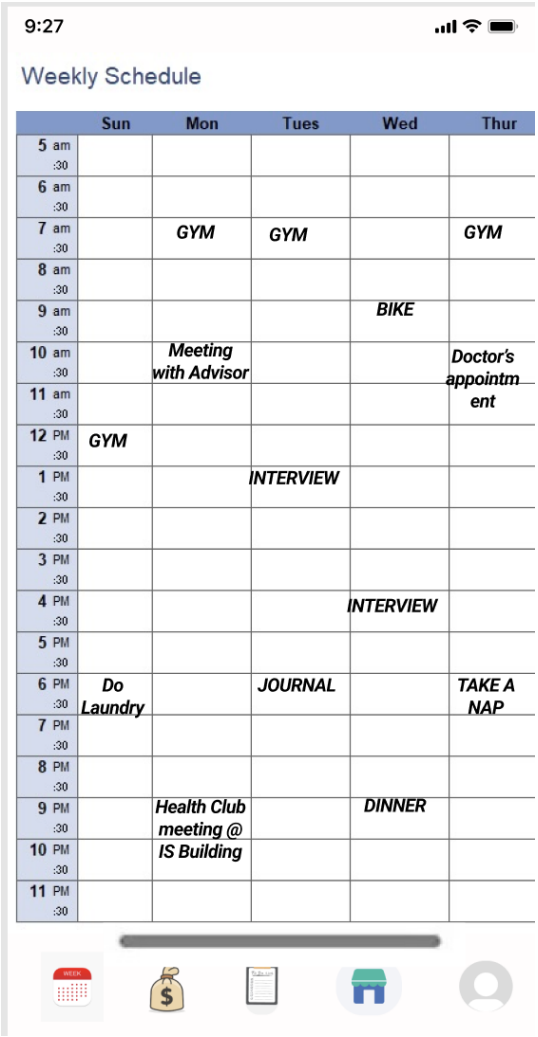
The To-Do List: This is an essential part of the application as it lists the tasks the student should or plans to complete. Once the task is completed, the user will cross it out and it will disappear from the list. This is also based on the order the user wants to get these tasks done. The user can add to the list by going to the settings and listing what day and time they want the tasks to be completed and then it will appear on this list.



The BUDGET: Another essential goal of this application is to help the student plan out their finances in a well-planned out manner. This page will list out the types and amount of expenses and also have the income distribution, so the user can see how much they will be saving and spending.



The Marketplace: This is the marketplace where students will be able to trade for various items. As shown, the student can either search for a specific item or view the popular items. In this mockup, a student is asking to trade their Computer Science book for a Science book.



The Calendar: There is a calendar in this application to make the student's life easier by organizing their events on a single platform. All their meetings or plans are listed on this calendar along with their timings and days. The user can scroll through to see more days.

The Profile: This is a profile page for the students to see essential information about themselves and be able to add things they want implemented into their system. There is also a question mark on the right lower corner of the page which is there for the student to talk to a support group about any issues. There is a setting symbol in the right upper corner where the students can input crucial information about themselves.

Glossary

508C: Standards implemented federally that require companies to make all software usable for users with disabilities.
API: Application programming interface
AWS: Amazon Web Services, cloud computing platform
Azure: Cloud platform designed to help bring new solutions to solve any challenge
California Consumer Privacy Act (CCPA): Regulates how companies use California residents' data
Cloud Hosting: The process of outsourcing an organization's computing and storage resources to a service provider that offers its infrastructure services in a utility model.
Dedicated Hosting: A type of Internet hosting in which the client leases an entire server not shared with anyone else.
GDPR: General Data Protection Regulation implemented in the EU
HIPAA: Health Insurance Portability and Accountability Act is a federal law passed in 1996. It requires the creation of national standards to protect patient health information from being disclosed without the patient's consent or knowledge
Hypertext Markup Language (HTML): Markup language designed to display documents in web browsers

iOS: Apple's operating system
JavaScript: Object-oriented programming language designed for creating dynamic web page content
Mbps: Megabits per second, internet speed
New Relic: Software that focuses on performance and availability monitoring
Tableau: Software that helps users create different charts, graphs, maps, dashboards, and stories for visualizing and analyzing data
UI: User Interface Designers
UX: User Experience Designers

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