Team 30: ScheduSmart - Product Backlog

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Project Title:

ScheduSmart

Problem Statement

As the world continues to evolve and the average person's life continues to get more and more complicated, the need for a tool that unlocks our capacity for productivity has risen. Our project seeks not only to deliver a tool that allows its users to organize their lives with assignment trackers and a fully functional calendar, but will also include a system that generates efficient schedules automatically, using the power of AI. The project will function as a website, offering a lesser computational load to users as opposed to the typical application approach. The project will offer a fully customizable experience to the user, making this website more user-friendly and creating a more enjoyable experience for the user than other similar applications.

Background Information

In today's fast-paced world, people are constantly juggling multiple responsibilities and tasks, making it increasingly challenging to stay organized and productive. The need for a tool that can effectively manage and streamline our lives has become more crucial than ever. Our project aims to address this need by providing a comprehensive productivity tool that combines assignment

trackers, a functional calendar, and an AI-powered scheduling system. The domain of users who could potentially benefit from this service is practically anyone who has an internet connection and device. On a more specific scope, our targeted users are people who require organizational services in their daily lives such as college students, professors, freelance professionals, etc. Students and professors need an integrated calendar and task manager for classes and assignments. Freelance professionals need a calendar to schedule meetings with clients and a task manager to manage billing and other secretarial services.

Many calendar applications already exist, however none have the specific capabilities we plan to implement (AI/Database/Statistics Dashboard) to our knowledge. Some popular examples include Trello, Asana, Todoist, Google Calendar, and Microsoft Outlook. These applications provide users with tools to manage tasks and appointments, but they may not have the same level of automation and AI-powered scheduling capabilities that our project aims to offer. Those will separate our service from others and elevate the product to higher levels.

Other similar applications that are already in existence sometimes have a high learning curve, missing features, or unintuitive design. To address this, we plan to have a user-friendly interface, as well as a suite of features that are not found in many other applications.

Requirements (Backlog)

Functional:

1. As a new user, I would like to create a new account
2. As a user, I would like to login and logout into my account
3. As a user, I would like to view my calendar and assignment tracker
4. As a student, I would like to add my homework deadline to the schedule.
5. As a student, I would like to schedule time to study for tests.

6. As a student, I would like to find the closest available time (15-minute meeting, etc).
7. As a student, I would like to see when I have no class (festival or break).
8. As a student, I would like to be able to prioritize my tasks.
9. As a student, I would like to be able to put a to do list aside for convenience.
10. As a student, I would like to manage time schedules before the start of a semester to smooth the course enrollment procedure, such as scheduling class times and breaks.
11. As a student, I would like to have a small notebook to record things I have done in the past as a reminder (finished assignments, meetings, etc.)
12. As a student, I would like to have the calendar automatically schedule time to complete homework.
13. As a student, I would like to type my schedule or tasks into a chat box and have AI schedule my day for me.
14. As a student, I would like to have a checklist of tasks.
15. As a student, I would like to be able to list times for exams.
16. As a student, I would like to be able to take notes.
17. As a student, I would like to set recurring study sessions.
18. As a student, I would like to receive suggestions for optimal study plans and breaks.
19. As a student, I would like to receive notifications about deadlines and exams.
20. As a user, I would like to add locations to my events using text or a map feature (i.e., Google Maps).
21. As a student, I would like to be able to import assignments from Brightspace, Canvas, or Blackboard.
22. As a student, I would like to attach documents/files to my tasks.

23. As a student, I would like to create a data table to track assignments and grades.
24. As a student, I would like to see the weather and have it impact my AI-generated schedule.
25. As a student, I would like to track progress on my assignments and see how much time I have planned to work on them.
26. As a student, I would like to see statistics on my productivity at certain times.
27. As a student, I would like to sort my assignments based on due date, creation date, class, type, etc.
28. As a student, I would like to share my schedule with teammates to find an available time slot for meetings.
29. As an engineer, I would like to be able to add a repeatable event (sprints, meetings, etc. etc.)
30. As a worker, I would like to mark a period as “working time” for every week, including commutes, and “out-of-office” time.
31. As a bodybuilder, I would like to add the daily calories I have.
32. As a bodybuilder, I would like a summary of how I work on it (total and average per month).
33. As a user, I would like to have a modular, customizable home screen.
34. As a user, I would like to set up reminders for my events and tasks.
35. As a user, I would like to invite other users to my events and see events I am invited to.
36. As a user, I would like to be able to connect Google Calendar to this calendar.
37. As a user, I would like to color coordinate my schedule.
38. As a user, I would like to export my schedule to a printable format.

39. As a user, I would like to visualize my calendar in different formats (day, week, month, etc.)
40. As a user, I would like the calendar home page to be simple and not overwhelming while including pertinent information, such as the date and time.
41. As a user, I would like to create different calendars that I can turn on and off individually.
42. As a user, I would like to drag and drop events in my schedule.
43. As a user, I would like to change my time zone.
44. As a user, I would like to be able to navigate the schedule with keyboard shortcuts without using the mouse.
45. As a user, I would like to adjust what time my schedule starts and ends, essentially scheduling when I am sleeping.
46. As a user, I would like to see what time of day it is in relation to my events.
47. As a user, I would like to see a quick view of my calendar without being overwhelmed with all features.
48. As a user, I would like to set and track long term goals.
49. As a user, I would like my to-do list tasks to synchronize with calendar events if toggled.
50. As a user, I would like to mark work done as completed.
51. As a user, I would like to differentiate events and tasks.
52. As a user, I would like to change the whole displayed text as my native language.
53. As a user, I would like to track daily habits that I set up, e.g. 5 mins of reading, 10 mins stretching, and cook 3 meals.
54. As a user, I would like to see the weather.
55. As a boss, I would like to have all workers see the schedule but unable to change it.

56. As a team manager, I would like to have my team members drop down what they have done for the project in the past.
57. As a team manager, I would like to have a chart (summary) on how each team member processes their job.
58. As a team manager, I would like to have a meeting with all the team members when all of them are free.
59. As a nurse, I would like to have all patients' dosing time (with constant intervals)
60. As a team leader, I would like to receive automated progress reports from the team.
61. As a team leader, I would like to assign tasks to employees.
62. As an employer, I would like to see when my employees will be out of the office.
63. As an employer, I would like to have the ability to accept or deny time-off requests that employees submit.
64. As an employee, I would like to schedule when I will be out of the office.
65. As an employee, I would like to quickly send meeting invites to coworkers.
66. As an employee, I would like to integrate my calendar with Zoom meetings, such as creating a meeting from the calendar, joining a meeting from the calendar, and getting notifications from the calendar about my meetings.
67. As a dietician, I would like to track my daily calories and water intake.
68. As a software engineer, I would like to add a scrum framework to my schedule
69. As a software engineer, I would like to upload design pdfs to the notebook section
70. As a software engineer, I would like to integrate my notebook with Github, including adding milestones to my calendar and receiving notifications from the calendar when someone pushes to a repository.

71. As a writer, I would like to keep my drafts organized with a simple file management system and events on the calendar when I update a draft.
72. As a writer, I would like to keep different notebook entries organized with folders/tags
73. As a writer, I would like to schedule reviews with my editor

Non-Functional:

Performance

To ensure our users have a positive experience using our website, our server response time must be within 600 ms.

Scalability

Because we have great ambition to make our product available to many people, we employ Nginx, known for its ability to handle large numbers of concurrent connections, and expect that it can handle up to 500 simultaneous requests. What's better, we will also try to enable short-term caching by setting up the Nginx configuration to allow more concurrent requests per second. If time allows, we may try to apply Proxmox to realize horizontal scaling by creating more than one server to support our service.

Security

For ScheduSmart, we place emphasis on customer privacy, thus designing several mechanisms to protect precious information. First of all, we will prevent SQL injection by using parameterized statements, escaping special characters, etc. Also, users' passwords will be encrypted through password encryption functions provided by the database, such as scram with sha256 so that we can shield our consumers from man-in-the-middle attacks for our users. Moreover, even on our server side, we cannot know the passwords since they are stored as ciphertext. Besides, we also need to deal with cross-site scripting when working on our front-end and back-end pages. To

achieve this, we would be careful with HTML tags and configure CSP properly for our Nginx web server. What's more, we will also let the Nginx server manage a reverse proxy to protect our server. If time allows, to thoroughly ensure our web security, we will take advantage of OWASP ZAP to do penetration testing.

Usability

To make it easier for our users to get started with ScheduSmart, we have figured out several requirements for the development team to help our consumers. On the one hand, we should design interactive web tours so that users can be more familiar with our functions and know how to use them by the step-by-step instructions. On the other hand, we will design a user-friendly interface and find more than 6 participants to use our applications and share their user experience with us to help us improve our products. If time allows, we can write a step-by-step user guide on Medium to make sure that our users know how to use this application.

Maintainability

As for maintainability, developers have to use Jenkins and Git to do version control and CI/CD allowing us to efficiently maintain our web. Besides, we should pay attention to error handling so that the developer who is responsible for maintaining this application can easily know which part causes errors from the clear and concise error messages at once.