

Team 25 - Product Backlog
BoileResources

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Problem Statement:

Students across Purdue often struggle finding the optimal resources for individual classes. For the resources they do come across, their scattered and unorganized nature can result in time wasted searching for relevant materials and difficulty connecting with peers for study groups. Other platforms like Coursicle and Boilerclasses do not provide a centralized platform for class resources that provides tailored recommendations or tools in order for students to achieve these goals, but simply focus on class schedules and basic search features. Our app will combine AI-powered resource recommendations, a dashboard for personalized class management, and features like study group matching and in-app chat to create a comprehensive and interactive platform for Purdue students, simplifying resource discovery and fostering collaboration, helping students achieve academic success more efficiently.

Background Info:

Audience

This platform allows students to find useful resources for their classes and also interact with other students who are looking for a study partner.

Similar Platforms

There are several existing course helper services like Coursicle and BoilerClasses. These platforms allow students to obtain information about their classes and help them study better. Coursicle helps students schedule and keep track of their classes while also providing a chat feature for communication. Boilerclasses gives students a summary of the course, grade distributions, and a weekly schedule full of class times.

Limitations

While the platforms listed above are very useful, the main bottleneck is that they are all separate websites. Students should not need to visit multiple sites in order to find the resources and information that they need for each class. On top of this, the other services don't provide suggested study material to help aid the student. Our goal for BoileResources is to make it a central hub where students can find all the information about their class, get suggested the best resources for that class, and be able to connect with others in that class as well.

Functional Requirements:

1. As a user, I would like to be able to register for a BoileResources account.
2. As a user, I would like to be able to log in to my account.
3. As a user, I would like to manage my account to change the username and other personal details (position, grade, major, etc.).
4. As a user, I would like to be able to reset my password if I forget it.
5. As a user, I would like to be able to add the classes that I am signed up for.
6. As a user, I would like to be able to edit and delete the classes that I am signed up for.
7. As a user, I would like to create study groups for classes that I am in.
8. As a user, I would like to join study groups of classes that I am in.
9. As a user, I can mark classes that I've already taken and this is updated in my profile.
10. As a user, I would like to be able to communicate to my study group via an in-app chat.
11. As a user, I would like to receive email notifications for chat groups I am in.
12. As a user, I would like to receive email notifications when the page for a class I am in is updated.
13. As a user, I would like to receive recommended study resources that scrape Google for each class that I signed up for.
14. As a user, I would like to be redirected to a Reddit search on the specific class through a button.
15. As a user, I would like to be redirected to a RateMyProfessor search on the specific class through a button.
16. As a user, I would like to be able to see information about class timings and class information.
17. As a user, I would like to be able to see information about professors (classes taught, contact information, and typical class size for classes taught), for the classes I signed up for.
18. As a user, I would like to be able to receive grade distributions and class descriptions about the classes I signed up for.
19. As a user, I can post resources for classes taken already/are taking for other students to see.
20. As a user, I can bookmark posted resources for each individual added class that can be easily viewed for future reference.
21. As a user, I can add, modify, or delete my profile picture.
22. As a user, I can filter classes I search for depending on subject, credit, or class type
23. As a user, I would like to be able to view my course calendar.
24. As a user, I would like to be able to export my course calendar to Google calendar.
25. As a user, I would like to switch between dark and light mode.
26. As a user, I can comment and view comments on posted resources..
27. As a user, I can edit my posted resources and comments.

28. As a user, I can share posted resources to others via a share button that copies a link to clipboard.
29. As a user, I can view and respond to a feedback form for comments/questions about the site.
30. As a user, I would like to label/verify myself as a student or instructor.
31. As a user, I can report inappropriate content/behavior on the platform.
32. As a user, I would like to filter recommended resources by type (e.g., PDFs, lecture slides, YouTube videos, textbooks).
33. As a user, I would like to get emails about new resources regarding the classes I signed up for
34. As a user, I would like to react to posted resources by upvoting/downvoting them for visibility.
35. As a user, I would like to react to comments on posted resources by upvoting/downvoting them for visibility.
36. If time allows, as a user, I would like to receive youtube video recommendations for the course I am taking.
37. If time allows, as a user, I can customize the layout of my dashboard to prioritize the classes and resources most relevant to me.
38. If time allows, as a user, I can view my exam timings for a certain class on my calendar.
39. If time allows, as a user, I can view the past exam averages for the exams of a certain class.
40. If time allows, as a user, I can input my courses into a scheduling assistant that will tell me what my week would look like based on the courses that I added.
41. If time allows, as a user, I can add tasks to a personal planner.

Non-Functional Requirements:

Architecture and Performance Requirements

- The application will have a completely separate frontend and backend to make collaboration and compatibility easier.
- Node.js and Express will be used to build the backend, providing a RESTful API.
- MongoDB will handle data storage.
- The frontend will be developed using React, fetching data via API requests
- Cloud storage and automated management features will also be provided by the application.

Security Requirements

- The application must protect sensitive user information and scheduling data from unauthorized access.

- The application must validate all user input to prevent injection attacks.
- The application must implement rate limiting to mitigate brute-force attacks, limiting users to a maximum of 100 requests per 5 minutes.
- Users must not be able to view other users' account details or scheduled classes unless explicitly permitted.
- The application must enforce secure login and registration processes, including email verification and strong password policies.
- The application must provide a user reporting and flagging system to identify and address potential security concerns.

Usability Requirements

- The application must feature a responsive design compatible with all modern devices and browsers.
- The interface must be intuitive and easy to navigate for all users.
- Each user must have a centralized profile dashboard displaying their activity on the platform.
- All students must have access to the same layout, but past students and TAs must have additional privileges to endorse posted resources.

Hosting/Deployment Requirements

- The backend and frontend must be deployed separately to allow independent modifications and scalability.
- The frontend must be deployed on Vercel.
- Deployment configurations must be managed through Vercel's dashboard to ensure streamlined updates and maintenance.