DevFocus: FocusBot

By: Team 2 Eazy (Andrew Delgadillo, Brandon Fontenot, Daniel Tolessa, Mahlet Zemui)

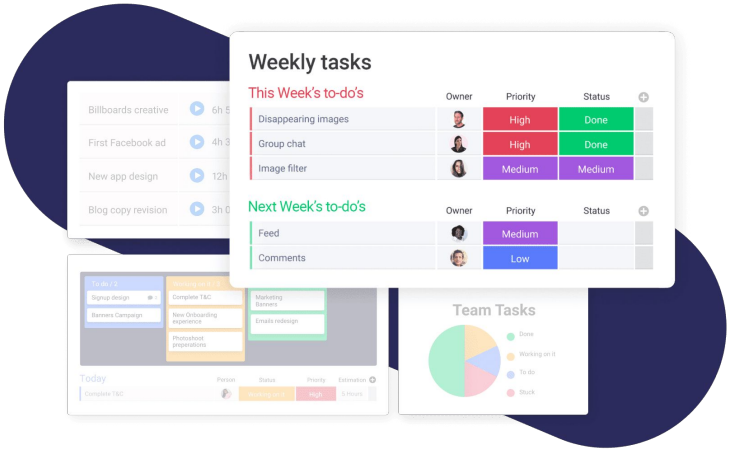
Problem

- Developers often have many responsibilities.
  - Projects are broken down into multiple tasks
  - Frequent requirement changes lead to the addition of even more tasks
- Remote work present many distractions (e.g. household distractions, digital diversions...)
- Remote work decreases an individual's motivation and accountability

Solution

- Task management
  - Schedule weekly tasks.
  - Generate optimized weekly plans.

- Work Session Recordings
  - Track progress during work sessions.
  - Provide productivity aids when stuck.

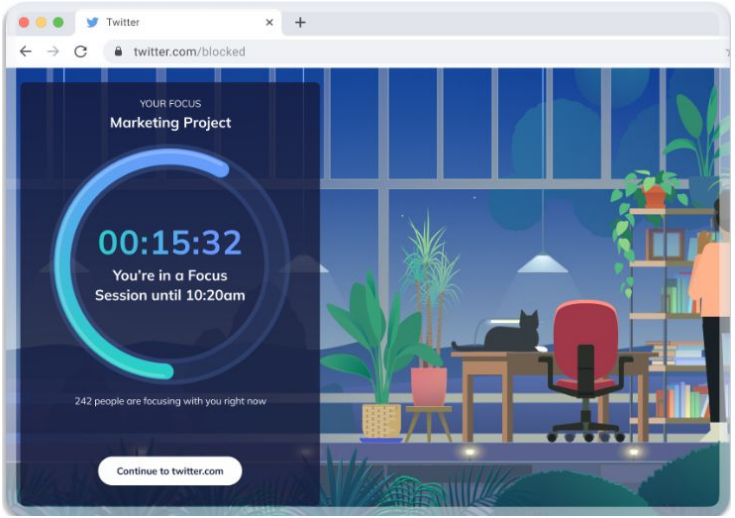


Related Work

- RescueTime Overview
  - Time management tool for individual productivity
  - Tracks time across various activities and devices
  - Generates detailed reports and analytics

- Similarities with FocusBot
  - Automatic tracking of time spent on activities
  - Goal setting and progress tracking
  - Aims to improve productivity in remote work environments
  - Provides insights for potential productivity enhancements

- Differences from FocusBot
  - RescueTime focuses on individual activities.
  - Does not track team activities like FocusBot.
  - FocusBot engages in interactive task management.



Class Concepts

- Use Cases
  - Helped clarify system functionalities from an end-user perspective.
- Mock User Interfaces
  - Provided a visual depiction of user engagement, to better understand user experience.
- Design Patterns
  - Guided our approach in designing a robust and maintainable system architecture.

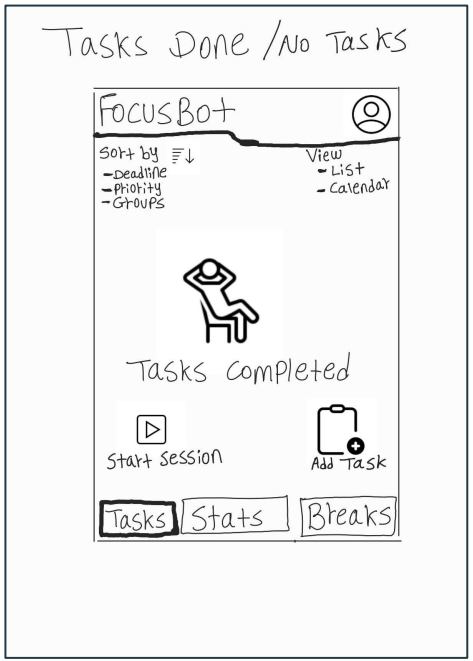
Use Case: Logging Tasks

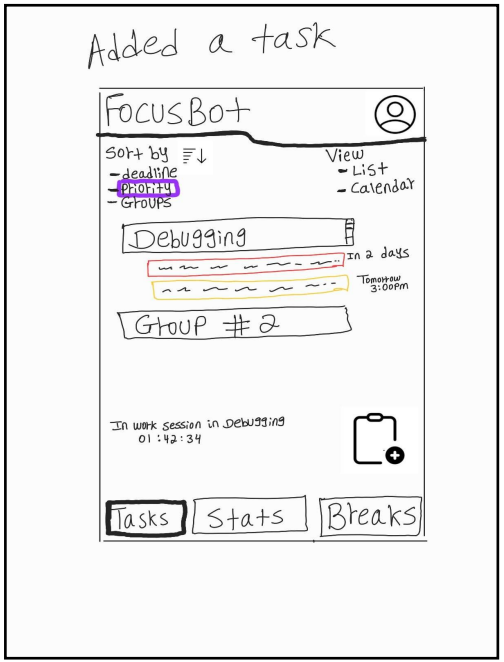
Preconditions	Main Flow	Subflows
User: - is logged into app, - has at least 1 task to enter.	User will: - go to the tasks page and click on “Add Task”, - input task information (i.e., description, priority, deadline, estimated difficulty/duration).	User will: - go to the tasks page and click on “Start Work Session”, - select “Work on New Task” and input task information.

Use Case: Logging Work Session

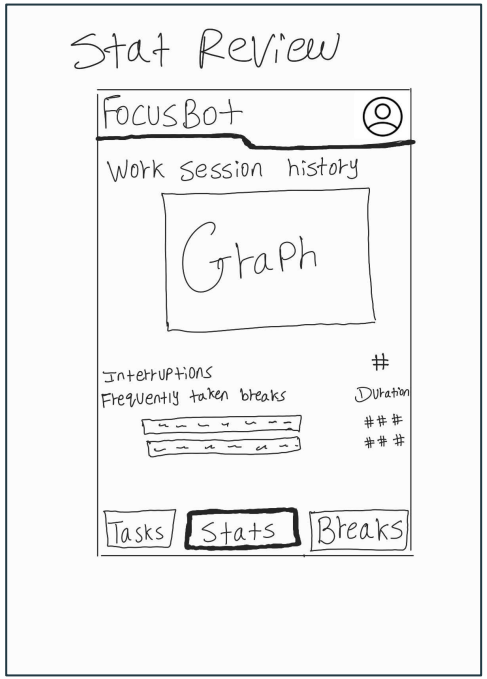
Preconditions	Main Flow	Subflows
User: - is logged into app.	User will: - go to the tasks page and click on “Start Work Session”, - select “Work on Existing Tasks” and start timer.	User will: - go to the tasks page and click on “Start Work Session”, - select “Work on New Task” and input task information before starting timer.

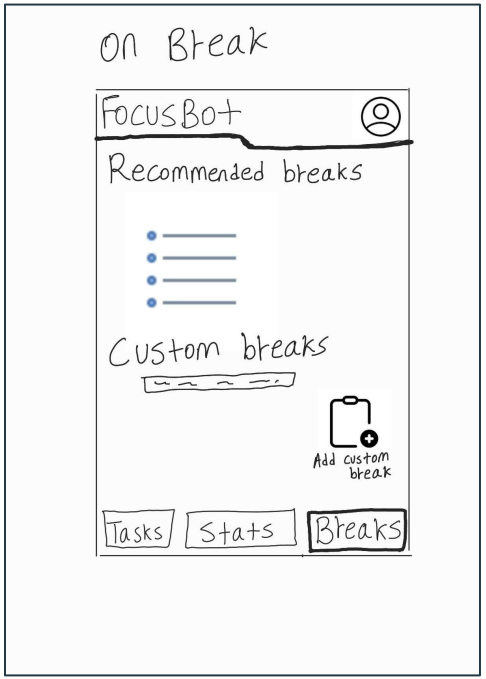
Mock User Interface





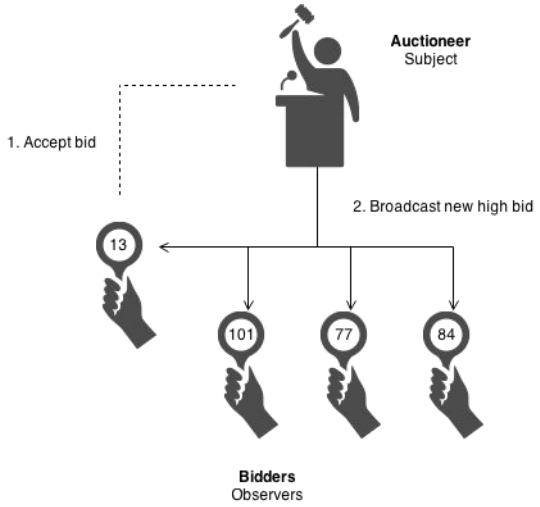
Mock User Interface





Design Pattern

- Behavioral Family
  - Focuses on how design can shape human behavior.
- Observer Pattern
  - Allows observers to keep track of a subject and act accordingly to its actions.
- Tasks as Observers
  - The tasks are able to keep track of what the user is doing and depending on multiple factors make recommendations.



What We Learned

- Design Patterns
  - Though we ended up using the Observer pattern we gained insight into the usefulness of the other patterns in our research.
- Team Development strategies
  - Agile
  - Kanban
- Requirements Analysis
  - Personas
  - Use Cases

Future Work

- Research-Based Approach:
  - Explore evolving needs in software development.
  - Identify key requirements for remote developers.

- AI-Driven Task Optimization:
  - Implement AI technologies like ChatGPT for task management.
  - Leverage AI for more efficient task handling.

- Personal Customization:
  - Integrate AI for personalized user experiences.
  - Tailor FocusBot to individual developer preferences.

References

[1] S. Lund, A. Madgavkar, J. Manyika, and S. Smith, "What's next for remote work: An analysis of 2,000 tasks, 800 jobs, and nine countries," McKinsey Global Institute, 2020. [Online]. Available: https://www.mckinsey.com/featured-insights/future-of-work/whats-next-for-remote-work-an-analysis-of-2000-tasks-800-jobs-and-nine-countries (Accessed Sep. 20, 2023).

[2] E. Aktaş, “The Software Engineer’s Guide to Avoid Work-From-Home Burnout,” Medium, 2020. [Online]. Available: https://betterprogramming.pub/the-software-engineers-guide-to-avoid-work-from-home-burnout-b5d887601641 (Accessed Sep. 20, 2023).

[3] “Apps to Improve Your Mental Health While Working Remotely”, Digital Health Buzz, 2021. [Online]. Available: https://digitalhealthbuzz.com/apps-to-improve-your-mental-health-while-working-remotely/ (Accessed Sep. 20, 2023).