KanBan Issue Tracking Application

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Lightning Talk

The Problem - Software Design Workflows

Lack of communication

Miscommunication between software engineers leads to inefficiencies and delays in team projects

Time consumption of task assignment

Adds an administrative burden on team leads and slows down workflow

Uneven workload distribution

Arbitrary or manual task assignment can sometimes lead to team members being overburdened or underutilized

Productivity bottlenecks

Inefficient tracking of task statuses can lead to delays and decreased productivity

The Solution: KanBan Issue Bot

The Solution

- Automated task assignment
  - Assigns issues based on team hierarchy, skill sets, and workload distribution
- Enhanced communication
  - Provides real-time collaborative features
- Streamlined workflow visualization
  - Uses a KanBan approach to visualize tasks
  - Prioritizes and tracks progress of tasks efficiently

Solution Justification

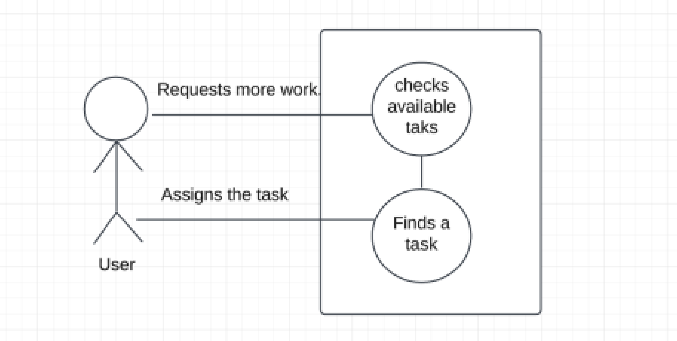
- Addresses communication challenges
  - Mitigates communication gaps through progress tracking and collaborative features

- Reduces manual workload distribution
  - Saves time for team leads
  - Ensures fair and efficient workload distribution

- Improves productivity
  - Progress tracking and workload balancing addresses bottlenecks and inefficiencies

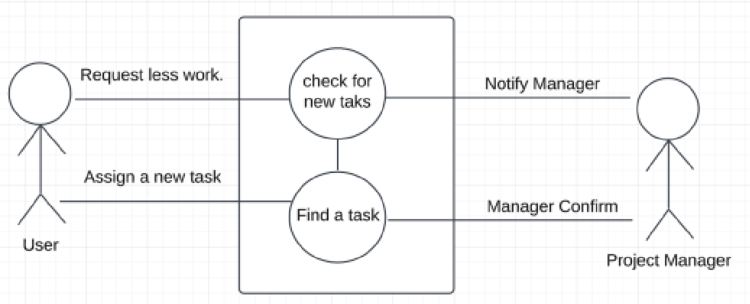
Use Cases

1. Request More Work
   a. Precondition:
      i. Users must have the Bot software installed and an active account.
   b. Main flow:
      i. User requests more work.
      ii. The bot checks available taks.
      iii. The bot assigns a task to the user.
   c. Subflows:
      i. User login.
      ii. The bot searches for a matching task.
      iii. The user confirms the task.
   d. Alternative Flows:
      i. If no tasks are available for the user's qualifications, the bot notifies them of the issue.



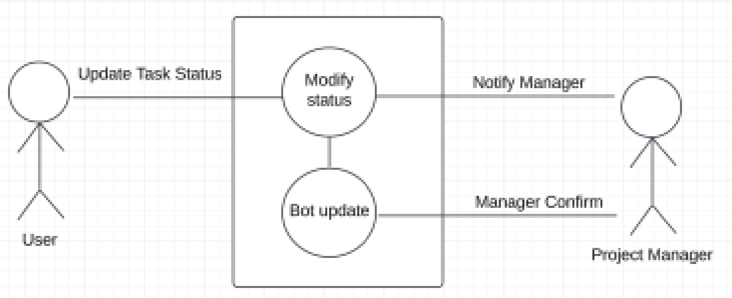
Use Cases

2. Reassign Task
   a. Precondition:
      i. User must have tasks assigned to their to-do list in the KanBan Issue Bot.
   b. Main flow:
      i. User requests less work.
      ii. The manager verifies the new task.
      iii. The bot re-assigns a task.
   c. Subflows:
      i. User login.
      ii. The bot searches for a replacement task.
      iii. The user confirms the new task.
   d. Alternative Flows:
      i. If no other users are qualified to take on the task, the task remains unassigned, and the original user is notified.

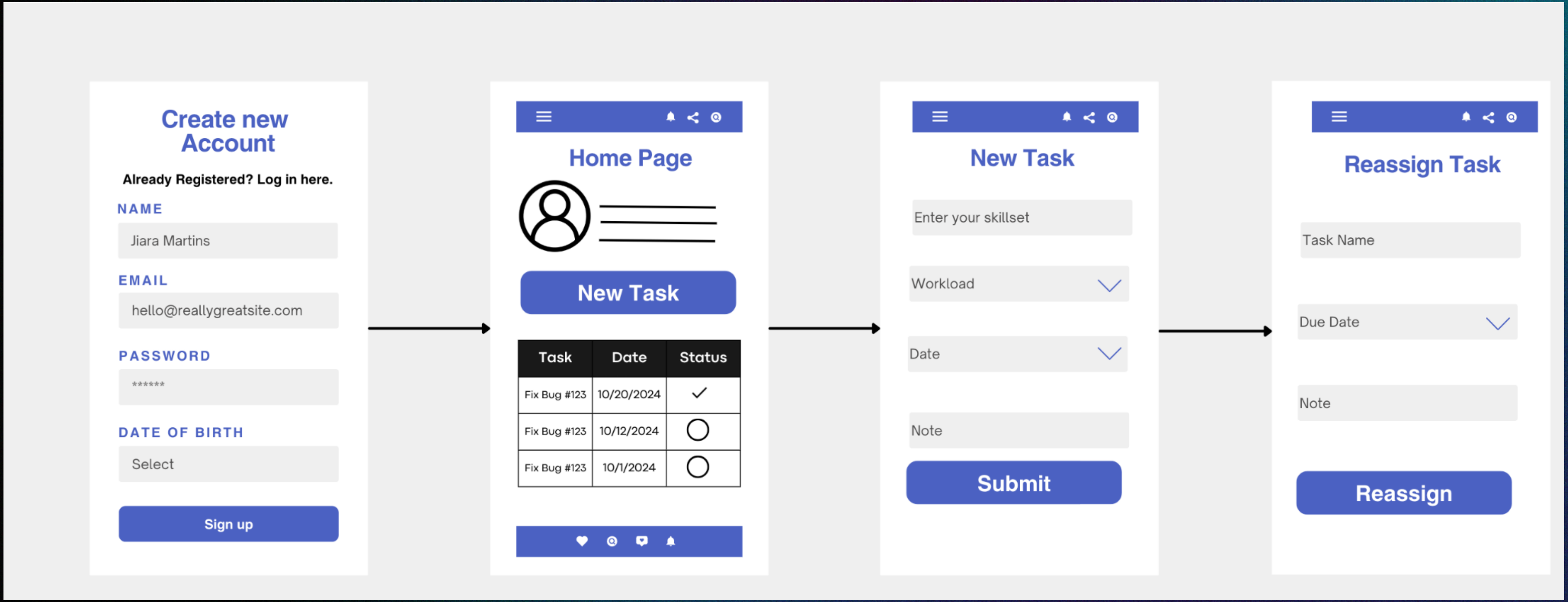


Use Cases

3. Update Task Status
   a. Precondition:
      i. The user must have an active task assigned in the KanBan system.
   b. Main flow:
      i. The user selects a task from the list.
      ii. The user updates the task's status
      iii. The bot updates the status.
   c. Subflows:
      i. The bot verifies the new status.
      ii. The manager confirms.
   d. Alternative Flows:
      i. If the developer attempts to update a task without proper permissions, the bot denies the request and notifies the developer.



User Interface



Create new Account

Already Registered? Log in here.

NAME: Jiara Martins

EMAIL: hello@reallygreatsite.com

PASSWORD: ******

DATE OF BIRTH: Select

Home Page

Task	Date	Status
Fix Bug #123	10/20/2024	✓
Fix Bug #123	10/12/2024	○
Fix Bug #123	10/1/2024	○

New Task

Reassign Task

Related Work

Motion

- Strong AI
- Lack of focus on software development
- Missing integration with software development tools

Monday

- Focused towards software development
- AI can not automatically assign tasks

Jira

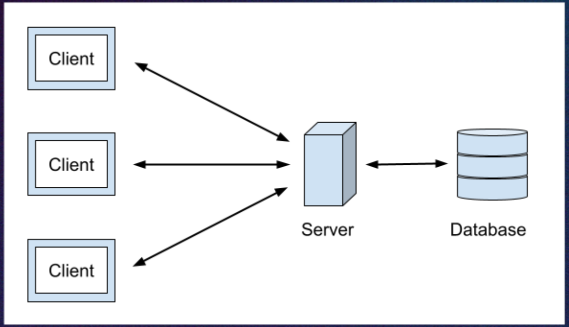
- Built for software development
- Has programmable automation features but is lacking advanced AI automation

Our Product

- Built for software development
- AI automatically manages software developer workloads

Useful Concepts

1. Kanban
   a. Used for tracking and visualizing tasks
   b. Helped to ease coordination and limit time spent managing tasks
2. Client-server architecture
   a. Used as the backbone of our system design
   b. Easily allows the system to synchronize user boards across different machines
3. Wireframing
   a. Used to create and adjust our UI design
   b. Helped to ensuring a high usability score for the layout and functionality of the design



Limitations and Future Work

1. **Timeboxing with KanBan**

   A universal issue with KanBan boards is the potential for an overwhelming amount of items in the “in-progress” column of the board. This can cause extreme stress for the user and potentially could slow down the projects timeline.

1. **Lack of Time**

   Due to the lack of time in the semester we ran out of time before being able to complete a working prototype of the code.

1. **Code implementation**

   a. GUI interface

   Create interface for both project manager and users (Software engineers)

   a. Local testing

   Finish coding and create local tests for all method implementations

   a. Quality Assurance Testing

   Demo the software product by having test trials with “real” users to address bugs.

THANK YOU