Software Design Project

Members

1. Ahmad Gathoo (2543667)
2. Siboniso Nene (2434209)
3. William Schwarer (2443680)
4. Muhammed Ahmed (2542012)
5. Jony Phiri (2456518)
6. Muhammad Chohan (2440224)

Project Website

https://white-pebble-01b7d4d0f.5.azurestaticapps.net

Github

https://github.com/sibonisonene/sdproject

YouTube Video

Project Plan: Sectional Title Management Platform

Overview: The project aims to develop a web-based sectional title management platform to streamline the responsibilities of body corporates in managing residential complexes. The platform will include features for user authentication, user management, issue management, notifications, reporting, and more.

Major Milestones:

- **Project Initiation (Week 1):**
    - Define project scope, objectives, and requirements.
    - Set up development environment and tools.
    - Assign roles and responsibilities within the team**.**
- **Sprint 1 (Week 1):**
    - Implement user authentication for residents.
    - Develop user management features for administrators (add and remove users).
    - Allow residents to log maintenance issues through the platform.
- **Sprint 2 (Week 2):**
    - Enhance issue management functionality, including status updates and assignment to staff members.
    - Implement notifications for users on issue updates and new issue submissions.
- **Sprint 3 (Week 3):**
    - Develop reporting capabilities, including fines per user and maintenance issue tracking over time.
    - Create a dashboard for administrators to view key metrics and data related to property management.
- **Sprint 4 (Week 4-5):**
    - Implement fine management functionality, including issuing fines and tracking payments.
    - Add additional features based on user feedback and project requirements.

Deadlines:

- Sprint 1 Completion: 24 April 2024
- Sprint 2 Completion: 1 May 2024
- Sprint 3 Completion: 8 May 2024
- Sprint 4 Completion: 22 May 2024
- Final Project Submission: 24 May 2024

Project Team:

- Product Owner: Naomi Muzamani
- Development Team:
    - Ahmad Gathoo
    - Siboniso Nene
    - William Schwarer
    - Muhammed Ahmed
    - Jony Phiri
    - Muhammad Chohan

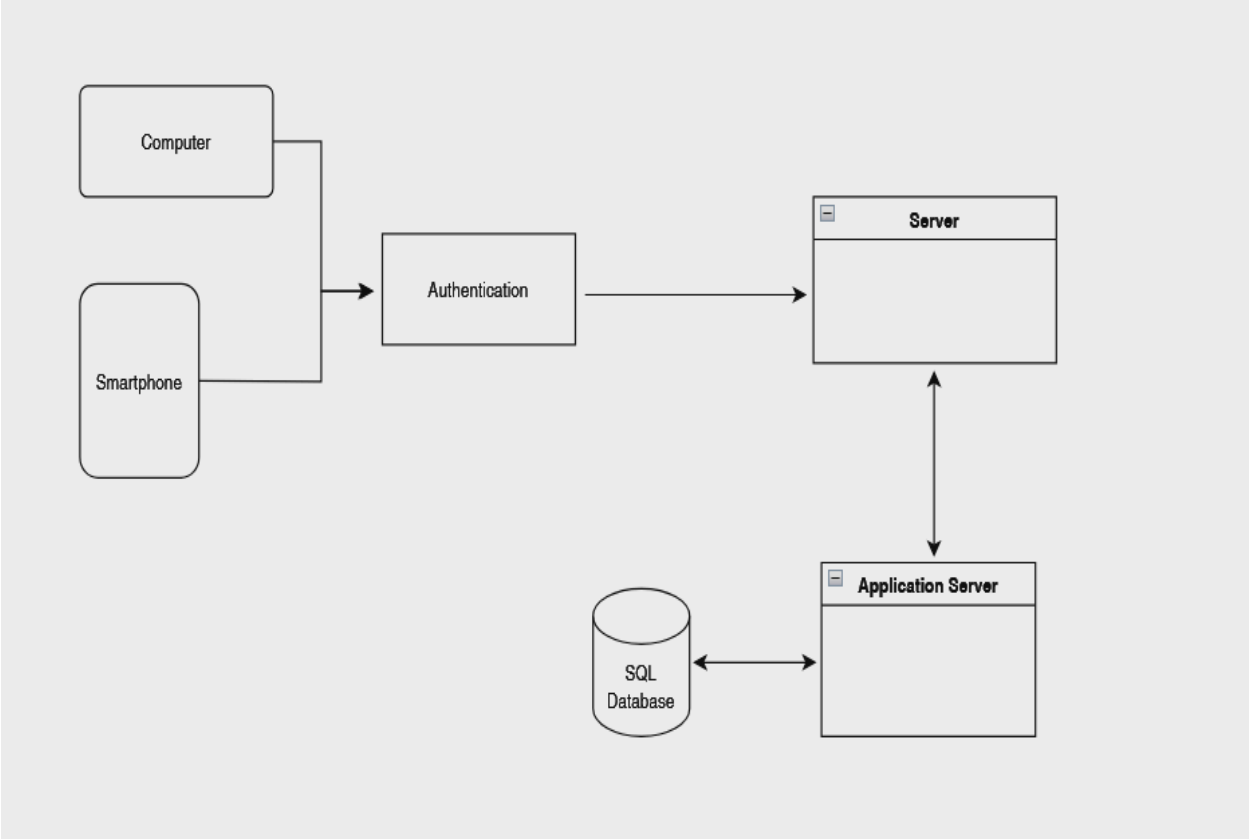
Dependencies:

- Availability of third-party APIs for integration (e.g., weather service, identity provider).
- Timely feedback and input from stakeholders.

Risk Management:

- Potential risks include technical challenges, scope creep, and delays in third-party API integration.
- Mitigation strategies include regular communication, agile adaptation to changing requirements, and proactive issue resolution.

Architecture Diagram (Overview)



Product Backlog**

1. **User Authentication and Authorization**
    - As a user, I want to be able to log in to the platform.
    - As an administrator, I want to be able to manage user accounts.
2. **User Management**
    - As an administrator, I want to be able to add a new user.
    - As an administrator, I want to be able to remove a user.
    - As an administrator, I want to be able to update user roles and permissions**.**
3. **Issue Management**
    - As a resident, I want to be able to log maintenance issues through the platform.
    - As a staff member, I want to be able to view and update the status of maintenance issues.
    - As an administrator, I want to be able to assign maintenance issues to staff members for resolution.
4. **Notifications**
    - As a user, I want to receive notifications when there are updates to my reported maintenance issues.
    - As a staff member, I want to receive notifications when new maintenance issues are reported.
5. **Dashboard and Reporting**
    - As an administrator, I want to be able to view a dashboard displaying key metrics and data related to user activity, maintenance issues, and system usage.
    - As a user, I want to be able to generate reports on maintenance issues and system usage**.**
6. **Security and Access Control**
    - As an administrator, I want to ensure that only authorized users have access to sensitive features and data.
    - As a user, I want to use a camera to be granted access.
    - As a security personnel, I want to be able to report security incidents or breaches
    - As a resident, I want the ability to register and manage guest access.
7. **User Interface and Experience**
    - As a user, I want the platform to have a user-friendly interface and intuitive navigation.
    - As a user, I want the platform to be responsive and accessible on various devices.
    - As a staff member, I want to be able to view my work schedule.

**The priority of the list is given by the numbering. 1 indicating the highest priority.

Sprint 1

Sprint Backlog

1. As a user, I want to be able to login to the platform.
    - Tasks
        - Design login page UI
        - Implement backend logic for user authentication
        - Integrate login page with backend API
    - Estimated Effort: 8 story points

2. As an administrator, I want to be able to add a new user.
    - Tasks
        - Design user creation form UI
        - Implement backend logic for adding new users
        - Integrate user creation form with backend API
    - Estimated Effort: 10 story points

3. As an administrator, I want to be able to remove a user.
    - Tasks
        - Design user removal UI
        - Implement backend logic for removing users
        - Integrate user removal UI with backend API
    - Estimated Effort: 10 story points

4. As a resident, I want to be able to log maintenance issues through the platform.
    - Tasks
        - Design issue logging form UI
        - Implement backend logic for issue logging
        - Integrate issue logging form with backend API
    - Estimated Effort: 8 story points

Daily Stand-Up Summaries

- Daily Stand-Up 1
    - Each team member provided an update on their progress since the Sprint Retrospective.
    - Mohammed reported that he will design the login page UI.
    - Discussed a framework, and decided we'll look into deciding between React and Angular.
    - Siboniso said he'll look into designing the SQL database.
    - It was agreed to reconvene for the next stand-up meeting at the same time tomorrow to review progress and address any new developments or challenges.
- Daily Stand-Up 2
    - Each team member provided an update on their progress since the last standup.
    - Team members discussed methods
    - Siboniso said he set up the database on Azure.
    - Team members decided on using React 18.
    - It was agreed to reconvene for the next stand-up meeting at the same time tomorrow to review progress and address any new developments.
- Daily Stand-Up 3
    - Each team member provided an update on their progress since the last standup.
    - The database design was shared.
    - Team members mentioned that they will finish looking at and learning some React.
    - Discussed the reviewing of the database design.
- Daily Stand-Up 4
    - Each team member provided an update on their progress since the last standup.
    - The database design was adjusted.
    - Tasks were reassigned.

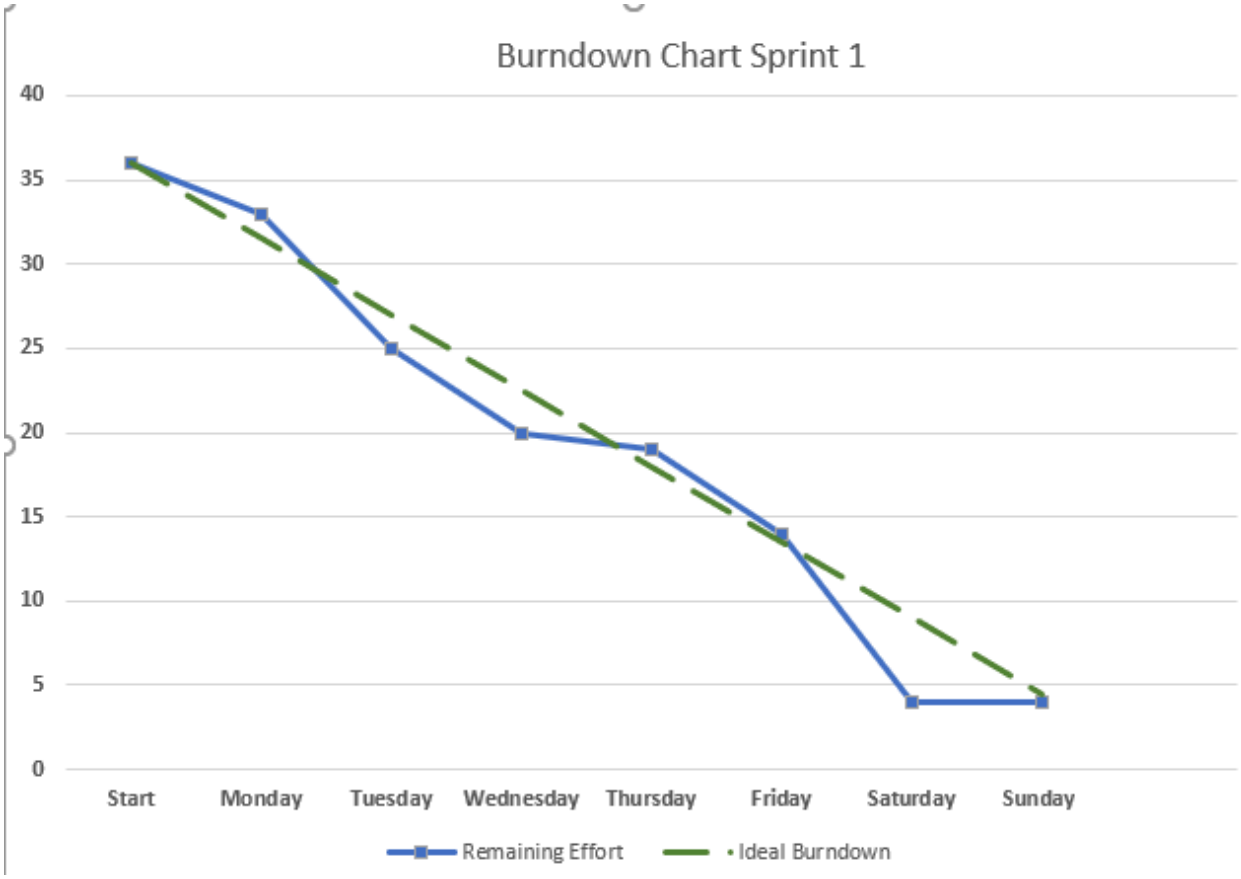
Sprint 1 Review

- We refined the backlog with the Product Manager.
- Discussed the centralisation of our github repository, with each member having a separate branch.
- Discussed the integration of tools as Jest wasn't yet integrated in our application.
- For the following week we had to implement user registration and adding of fines by the admin.

Sprint 1 Retrospective Report

- Communication between team members could be enhanced to ensure everyone is on the same page regarding project progress and expectations.
- The actual code was good, but we need to integrate it better.
- The estimation of effort for certain tasks could be improved to better align with actual time required for completion.

Sprint 1 Burndown Chart



Sprint 2

Sprint Backlog

1. As an administrator, I want to be able to update user roles and permissions.
    - Tasks
        - Design user role management UI.
        - Implement backend logic for updating user roles.
        - Integrate user role management UI with backend API.
    - Estimated Effort: 10 story points

2. As a staff member, I want to be able to view and update the status of maintenance issues.
    - Tasks
        - Design issue status update UI for staff members.
        - Implement backend logic for updating issue status.
        - Integrate issue status update UI with backend API.
    - Estimated Effort: 8 story points

3. As a user, I want to receive notifications when there are updates to my reported maintenance issues.
    - Tasks
        - Set up notification system framework.
        - Implement backend logic for sending notifications on issue updates.
        - Integrate notification system with issue management functionality.
    - Estimated Effort: 12 story points

4. As a staff member, I want to receive notifications when new maintenance issues are reported.
    - Tasks
        - Develop functionality for sending notifications to staff members on new issue reports.
        - Integrate notification system with issue management functionality.
    - Estimated Effort: 8 story points

Daily Stand-Up Summaries

- Daily Stand-Up 1
    - Each team member provided an update on their progress since the Sprint Retrospective.
    - UML diagram task was created and assigned.
    - It was agreed to reconvene for the next stand-up meeting at the same time tomorrow to review progress and address any new developments.
- Daily Stand-Up 2
    - Each team member provided an update on their progress since the last standup.
    - No significant advancements were made.
- Daily Stand-Up 3
    - Each team member provided an update on their progress since the last standup.
    - The actual database was restructured.
- Daily Stand-Up 4
    - Each team member provided an update on their progress since the Sprint Retrospective.
    - No significant adjustments were made.

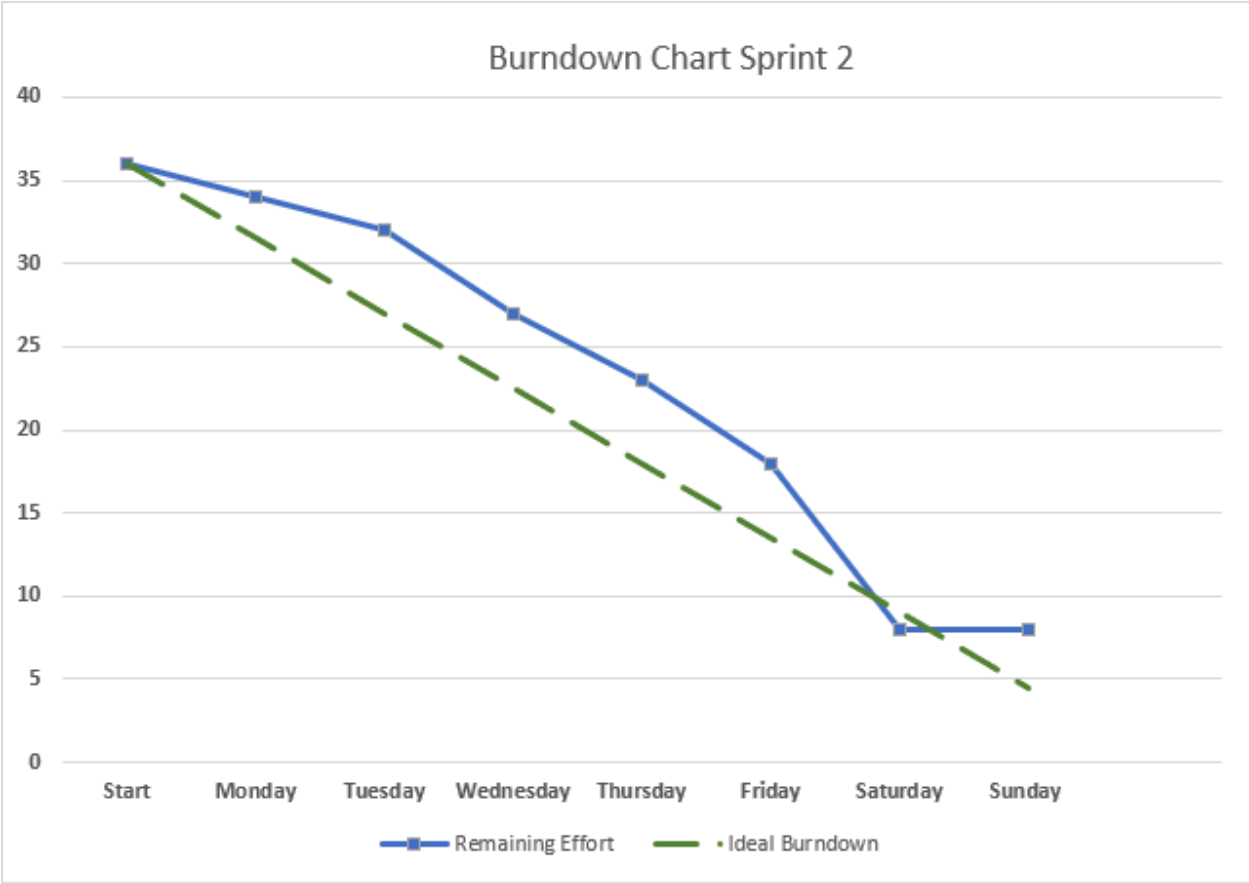
Sprint 2 Review

- The repository centralisation was partially achieved.
- Some cohesion issues with the branches were still present
- There were some issues with the UML diagrams that needed to be fixed.

Sprint 2 Retrospective Report

- We needed to focus more on implementing our user stories.
- Communication among team members was still lacking.
- For this week we must meet everyday to ensure we're all on the same track.

Sprint 2 Burndown Chart



Sprint 3

Sprint Backlog

1. As a user, I want to be able to generate reports on maintenance issues and system usage.
    - Tasks
        - Design report generation UI for users.
        - Implement backend logic for generating maintenance issue reports.
        - Implement backend logic for generating system usage reports.
        - Integrate report generation UI with backend API

    - Estimated Effort: 12 story points

2. As an administrator, I want to be able to view a dashboard displaying key metrics and data related to user activity, maintenance issues, and system usage.
    - Tasks
        - Design dashboard UI for administrators.
        - Implement backend logic for retrieving and processing key metrics and data.
        - Develop dashboard components for displaying metrics and data.
        - Integrate dashboard UI with backend API
    - Estimated Effort: 15 story points

3. As an administrator, I want to be able to assign maintenance issues to staff members for resolution.
    - Tasks
        - Design issue assignment UI for administrators.
        - Implement backend logic for assigning issues to staff members.
        - Integrate issue assignment UI with backend API.
    - Estimated Effort: 10 story points

4. As an administrator, I want to ensure that only authorized users have access to sensitive features and data.
    - Tasks

        - Review and update access control mechanisms.
        - Implement role-based access control for sensitive features and data.
        - Conduct thorough testing to ensure access control is enforced correctly
    - Estimated Effort: 10 story points

5. As a user, I want to receive notifications about new features and updates.
    - Tasks
        - Design notification system UI for users.
        - Implement backend logic for sending notifications about new features.
        - Integrate notification system with frontend and backend.
    - Estimated Effort: 8 story points

6. As an administrator, I want to track user activity to analyze usage patterns.
    - Tasks
        - Design user activity tracking mechanism.
        - Implement backend logic for capturing user activity data.
        - Develop reporting features for user activity analysis.
    - Estimated Effort: 12 story points

Daily Stand-Up Summaries

- Daily Stand-Up 1
    - Each team member provided an update on their progress since the Sprint Retrospective.
    - The backlog was refined.
    - New tasks were distributed.
    - It was agreed to reconvene for the next stand-up meeting at the same time tomorrow to review progress and address any new development.
- Daily Stand-Up 2
    - Each team member provided an update on their progress since the last standup.
    - No significant advancements were made.
    - It was agreed to reconvene for the next stand-up meeting at the same time tomorrow to review progress and address any new developments.
- Daily Stand-Up 3
    - Each team member provided an update on their progress since the last standup.
    - Tasks were redistributed due to technical difficulty.
    - It was agreed to reconvene for the next stand-up meeting at the same time tomorrow to review progress and address any new developments.
- Daily Stand-Up 4
    - Each team member provided an update on their progress since the last standup.
    - An in person meeting arranged to work on repo organisation.

Sprint 3 Review

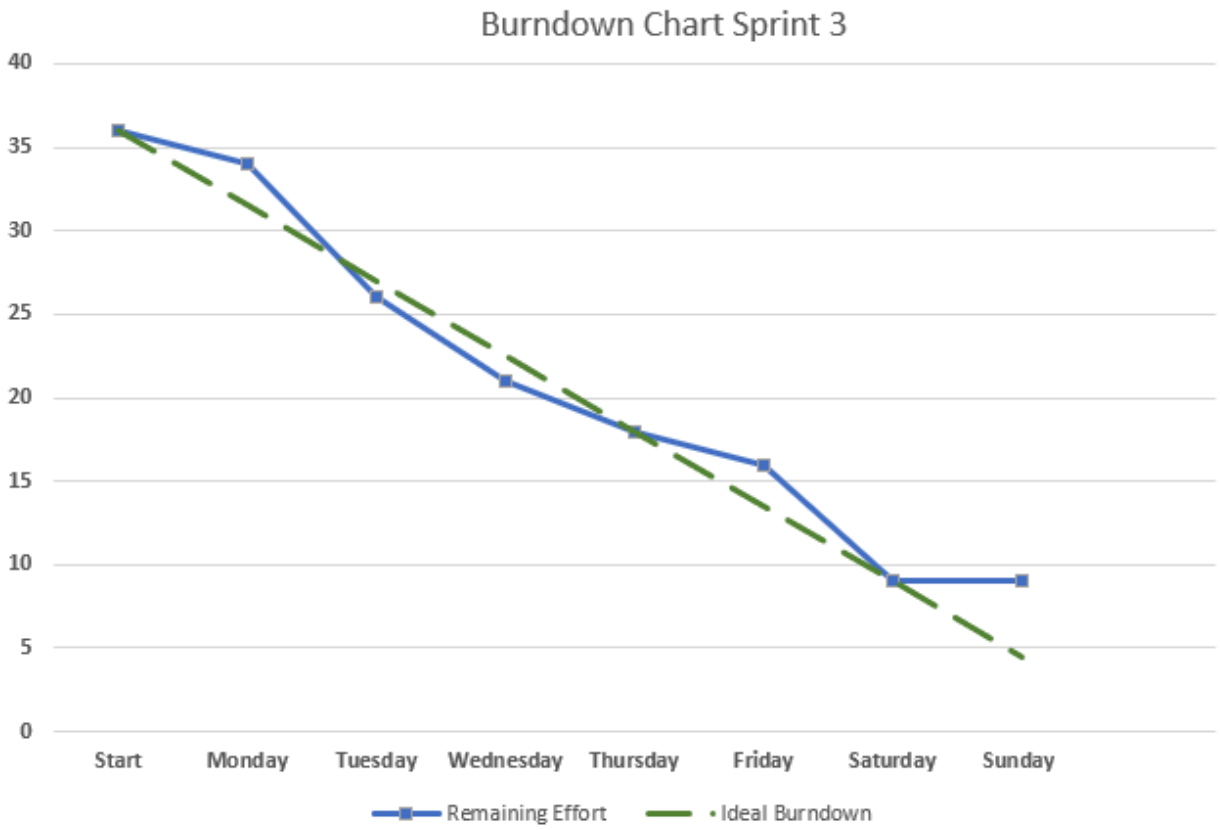
- We refined the backlog with the Product Manager.
- Cohesion of the git repository was achieved.

Sprint 3 Retrospective Report

- Various home life and academic difficulties resulted in low productivity during this
- Communication was the best this week. So we'll work like this from now on.

- The estimation of effort for certain tasks improved.

Sprint 3 Burndown Chart



Sprint 4

Sprint Backlog

1. As a user, I want to use a camera to be granted access.
    - Tasks
        - Research and select appropriate camera hardware and software.
        - Design UI for camera-based access control.
        - Implement backend logic for processing camera input and granting access
    - Estimated Effort: 15 story points

2. As a security personnel, I want to be able to report security incidents or breaches
    - Tasks
        - Design incident reporting UI for security personnel.
        - Implement backend logic for recording security incidents and breaches.
        - Develop workflow for incident escalation and resolution.
        - Integrate incident reporting with notifications for relevant stakeholders.
    - Estimated Effort: 8 story points

3. As a staff member, I want to be able to view my work schedule.
    - Tasks
        - Design work schedule viewing UI for staff members.
        - Implement backend logic for retrieving and displaying work schedules.
        - Allow staff members to request shift changes or time-off directly from the platform.
    - Estimated Effort: 12 story points

4. As a resident, I want the ability to register and manage guest access to the premises.
    - Tasks
        - Design guest access management UI for residents.

        - Implement backend logic for registering and managing guest access requests.
        - Allow residents to specify guest details, access duration, and entry permissions
    - Estimated Effort: 10 story points

Daily Stand-Up Summaries

- Daily Stand-Up 1
    - Each team member provided an update on their progress since the Sprint Retrospective.
    - No significant advancements were made.
    - It was agreed to reconvene for the next stand-up meeting at the same time tomorrow to review progress and address any new developments or challenges.
- Daily Stand-Up 2
    - Each team member provided an update on their progress since the last stand up.
    - UML diagrams were fixed.
    - It was agreed to reconvene for the next stand-up meeting at the same time tomorrow to review progress and address any new developments.
- Daily Stand-Up 3
    - Each team member provided an update on their progress since the last standup.
    - Database was expanded.
    - User registration data was expanded.
- Daily Stand-Up 4
    - Each team member provided an update on their progress since the last stand up.
    - Home page design to be adjusted.
    - The general design of the project to be thought through.

Sprint 4 Review

- The product manager was happy with the finished product.

Sprint 4 Retrospective Report

- This was our best week in terms of work done.
- Communication amongst the team members was good.

Sprint 4 Burndown Chart