Practical 6

Team Members:

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21BCE168 - Niti Chirag Patel
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AIM: Product verification and validation for each Sprint outcome. (Prepare a summarized Sprint wise report on what was planned, what was executed, what was not achieved as a sprint outcome, verification and validation steps performed for each sprint outcome etc.)

SPRINT-1:

Sprint Overview:

- Sprint Duration: 1 week

- Product Owner: Prisha Tushar Shah

- Scrum Master: Nikunj Jayvin Mahida

-Cross Functional Team: Richa Anilkumar Yadav, Niti Chirag Patel

Sprint Goals:

1. Implement a selection page for drivers and police officers.

2. Develop login and registration functionalities for drivers.

3. Add features for drivers to manage fines, view receipts, and account details.

Sprint Achievements:

1. Selection Page:

- Successfully implemented and styled the selection page.

- Integrated functionality for users to choose between "Driver" and "Police Officer".

2. Driver Registration and Login:

- Completed the registration page and process.

- Developed the login functionality and linked it to the database.

- Ensured security measures like hashing of passwords.

3. Driver Portal Functionalities:

- Created the home page for drivers after successful login.

- Added table for displaying violations and respective fines.

- Implemented the "Fines", "Pay fine", "View Receipt", and "History" buttons with their respective functionalities.

Sprint Challenges:

- Delays in API integration for the fines management system due to backend service issues.

- Some features like the "Change Password" and "Account Details" functionalities were not completed due to unexpected UI design complexities.

Sprint Deliverables:

➢ Completed:

- Selection page with user role options.

- Driver registration and login processes.

- Basic home page layout and fine display functionalities.

➢ Incomplete:

- "Change Password" functionality.
- Complete "Account Details" view and edit features.

Verification and Validation Steps:

1. Code Review and QA Testing:
   - Conducted thorough code reviews for each feature.
   - QA tested all functionalities using manual and automated test cases.
2. User Acceptance Testing (UAT):
   - Conducted UAT with internal stakeholders to ensure the portal meets user expectations and requirements.
   - Gathered feedback to prioritize fixes in the next sprint.
3. Performance Testing:
   - Ensured that the new features perform well under expected user loads.

Sprint Retrospective:

➢ What Went Well:

- Strong collaboration within the team.
- Effective problem-solving for backend issues.

➢ Improvement Areas:

- Better estimation of tasks to accommodate design complexities.
- Need for earlier integration testing to catch service integration issues.

➢ Next Steps:

- Address the incomplete functionalities in the next sprint.
- Refine the existing features based on stakeholder feedback.
- Improve the test coverage for all new features.

SPRINT-2:

Sprint Overview:

- Sprint Duration: 1 week

- Scrum Master: Nikunj Jayvin Mahida

- Product Owner: Prisha Tushar Shah

Sprint Goal:

Develop and integrate the registration, login, and home page functionalities specifically for police officers, along with essential navigation and operational features.

Sprint Achievements:

1. Police Registration and Login Pages:

   - Successfully implemented the registration page for police officers with validation checks for data entry.

   - Created the login page with secure authentication mechanisms.

2. Home Page Functionality:

   - Developed the initial layout and basic interactive elements for the home page tailored to police officer needs.

   - Integrated key navigation buttons including "Generate Fines", "Receipt", "License Card", and "Account" functionalities.

3. Navigation Bar:

   - Implemented a fully functional navigation bar accessible from the home page.

   - Ensured responsive design for better accessibility across devices.

Sprint Challenges:

- Integration of the "License Card" viewing functionality was more complex than anticipated, leading to partial completion.

- Some backend service issues delayed the full integration of the "Receipt" button functionality.

Sprint Deliverables:

➢ Completed:

- Police officer registration and login functionalities.

- Basic home page with navigation to major sections.

➢ Incomplete:

- Complete backend integration for "Receipt" and "License Card" functionalities.

Verification and Validation Steps:

1. Code Reviews:

- Conducted thorough code reviews after completion of each major task to ensure quality and adherence to project standards.

2. QA Testing:

- Manual testing was performed on all new functionalities to ensure they met the acceptance criteria set out in the sprint backlog.

- Automated tests were written and executed for the registration and login processes.

3. User Acceptance Testing (UAT):

- Simulated police officer interactions with the portal to gather feedback on the user experience and functionality.

- Adjustments were made based on feedback to improve usability and functionality.

4. Security Testing:

-Security tests were conducted, especially on the login and registration modules, to ensure data integrity and security.

Sprint Retrospective:

➢ What Went Well:

- Effective collaboration and communication among team members.

- Successful implementation of the user interface according to the planned design.

➢ Areas for Improvement:

- Need for more robust backend service integration planning.

- Better time management to accommodate unexpected technical challenges.

➢ Next Steps

- Prioritize the completion of incomplete functionalities like "Receipt" and "License Card" viewing options.

- Continue refining the user interface based on ongoing feedback from UAT.

- Focus on enhancing security features based on the latest testing feedback.

SPRINT-3:

Sprint Overview:

- Sprint Duration: 1 week

- Team Members: Prisha Tushar Shah (Developer), Nikunj Jayvin Mahida (Developer)

- Scrum Master: Richa Anilkumar Yadav

- Product Owner: Niti Chirag Patel

Sprint Goal:

To implement functionalities that allow police officers to generate, send, receive, view, and download fine slips within a unified system.

Sprint Achievements:

1. Fine Slip Generation:

   - Developed functionality to create fine slips including details such as offender's information, offense details, and penalties.

   - Integrated form validation to ensure data integrity.

2. Sending and Receiving Fine Slips:

   - Implemented features allowing officers to send fine slips electronically to offenders.

   - Setup notifications for officers when a fine slip is paid, updating the fine's status.

3. Viewing and Managing Fines:

   - Created a dashboard for officers to view all generated fines.

   - Enabled features to open and view detailed information of each fine from the list.

   - Added functionality to download fine details as a PDF for record-keeping.

Sprint Challenges:

- Encountered delays in setting up the back-end service for handling large volumes of data downloads.

- Integration issues with external payment gateways for fine payments.

Sprint Deliverables:

➢ Completed:

- Fine slip generation module.

- Sending and receiving fine notifications.

- Viewing and managing fines dashboard.

➢ Incomplete:

- Full integration with external payment services for real-time fine payment tracking.

Verification and Validation Steps:

1. Unit Testing:

- Developed and executed unit tests for each new function, ensuring that all modules behave as expected independently.

2. Integration Testing:

- Conducted integration tests to ensure that new functionalities work well with existing features.

- Checked integration points with external services, which highlighted issues with payment gateways.

3. System Testing:

- Performed comprehensive system testing to validate the complete functionality of the fine management system.

- Included stress testing the download feature to ensure it handles expected loads.

4. User Acceptance Testing (UAT):

- Arranged sessions with actual users (police officers) to interact with the system and provide feedback on usability and functionality.

- Adjusted UI elements and workflows based on user feedback to enhance practical usability.

Sprint Retrospective:

➢ What Went Well:

- Strong teamwork and communication facilitated swift feature development.

- Successful implementation of the core functionalities for fine management.

➢ Areas for Improvement:

- Need for more robust testing with external integrations early in the sprint.

- Improve data handling capabilities to manage downloads more efficiently.

➢ Next Steps

- Focus on resolving the integration issues with payment gateways to enable real-time payment updates.

- Enhance the data download feature to handle larger data sets without impacting system performance.

- Continue refining the user interface based on ongoing feedback from police officers.

SPRINT-4:

Sprint Overview:

- Sprint Duration: 1 week

- Team Members: Nikunj Jayvin Mahida (Developer), Prisha Tushar Shah (Developer)

- Scrum Master: Richa Anilkumar Yadav

- Product Owner: Niti Chirag Patel

Sprint Goal:

To enhance the fine management system for drivers by enabling functionalities to view all fines, view individual fines in detail, and download fine slips for record-keeping.

Sprint Achievements:

1. View All Fines:

   - Developed a comprehensive dashboard that lists all fines associated with a driver, including key details such as date, amount, and status.

   - Integrated sorting and filtering capabilities to allow drivers to easily navigate their fines.

2. View Individual Fines:

   - Implemented functionality for drivers to click on any fine in the list and view detailed information about that specific fine, including the offense, location, and any photographs or documents associated with the fine.

3. Download Fine Slips:

   - Added the capability for drivers to download detailed fine slips in PDF format directly from the individual fine view page.

Sprint Challenges:

- Initial performance issues with the fine list loading times due to high data volume.

- Difficulty in implementing a robust PDF generation tool that consistently formats the slips for all types of fines.

Sprint Deliverables:

➢ Completed:

- Viewing all fines with basic details.

- Individual fine details accessible through interactive list items.

- Downloadable fine slips in PDF format.

➢ Incomplete:

- Optimization of list performance with large datasets was not fully achieved.

- Some issues with PDF formatting need further refinement.

Verification and Validation Steps:

1. Unit Testing:

- Conducted unit tests for each backend service to ensure correct functionality and robust error handling.

2. Integration Testing:

- Tested the integration of the new functionalities with existing systems, such as the database and user authentication services.

3. System Testing:

- Executed full system tests to evaluate the interaction between all components and the user interface, focusing on usability and performance.

4. User Acceptance Testing (UAT):

- Facilitated a UAT phase with a select group of drivers to receive feedback on the utility and user-friendliness of the new features.

- Adjustments were made based on user feedback, particularly in improving the interface and the clarity of the information presented.

Sprint Retrospective:

➢ What Went Well:

- Effective collaboration between front-end and back-end teams resulted in smooth integration of the new features.

- User feedback was overwhelmingly positive regarding the ease of accessing fine information.

➢ Areas for Improvement:

- Need for better initial performance testing with mock large datasets to avoid mid-sprint performance optimization.

- Further work is required to enhance the reliability and visual layout of the generated PDF slips.

➢ Next Steps

- Prioritize performance optimization for the fines list to handle large datasets more efficiently.

- Continue refining the PDF generation process to ensure high-quality outputs regardless of the content complexity.

- Plan additional user testing sessions to validate improvements and gather more detailed feedback on user needs.