

Parking Payment System Presentation

Revolutionizing your parking experience



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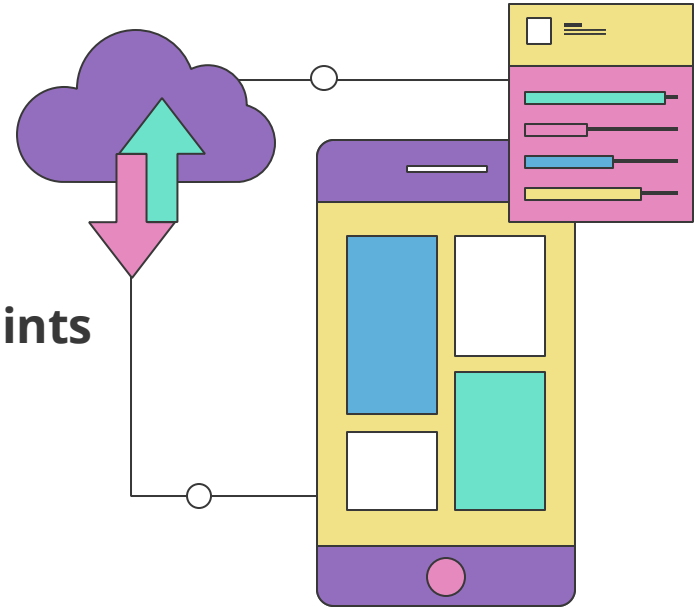
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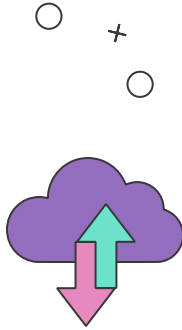
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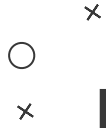


Introduction



Welcome to the introduction of our project, the Parking Payment System. Our team, comprised of four dedicated professionals, has embarked on a mission to streamline the parking experience using cutting-edge technology. As we unveil this innovative Java-based application complete with a user-friendly graphical user interface (GUI), we aim to redefine the standards of convenience and efficiency in parking management. This system is not only a solution to the challenges faced by daily commuters but also a leap forward in the integration of technology into everyday life. Join us as we explore the features, the development process, and the impact of this project, which stands at the intersection of practicality and technological advancement.





Meet The Team



NAMAN VERMA
Project Manager



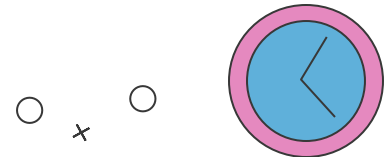
BEN CHASE
Progress Facilitator



MOHAMMED KASHIF AHMED
Documentation
Lead



PATRICK WILSON
Technical Lead



Roles & Responsibilities



Project Manager

Responsible for calling and organizing meetings, coordinating team member efforts and communications (including all project related communications with instructor)



Progress Facilitator

Responsible for monitoring progress towards milestones, proactively working with other team members to avoid productivity bottlenecks, and reporting unresolvable conflicts to instructor



Documentation Lead

Responsible for coordinating written contributions from team members (this includes feature boards), reviewing for suggested amendments, editing for coherence (not content), and monitoring and reporting documents status at regular meetings



Technical Lead

Responsible for coordinating and troubleshooting implementation contributions from team members, maintaining development infrastructure and regular implementation builds, providing technical assistance to team members when necessary, and monitoring and reporting implementation status at regular meetings





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Defining Project Scope

The project's scope targets the modernization of the parking payment process through a Java-based program with a graphical user interface (GUI).

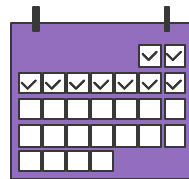
Our main objectives are:

- Enhance user convenience by simplifying the payment process.
- Optimize parking space management for efficiency.
- Replace outdated payment methods with streamlined operations.
- Improve overall parking experience for users.
- Set new standards in parking technology and innovation.
- Facilitate quick and intuitive user interactions with the payment system.
- Integrate Real-time Data Analytics: Implement analytics features that allow real-time tracking of parking space occupancy and usage patterns for data-driven management.

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System Requirements

The project's requirements are designed to ensure both user satisfaction and system robustness. For users, the system will offer easy navigation, secure payment methods, precise spot selection, and real-time updates for a seamless parking experience. On the technical side, the project will be anchored by a Java-based application, featuring a user-friendly GUI, and supported by a comprehensive database to manage parking spots, transactions, and generate reports, ensuring reliability and efficiency.

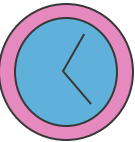


PARKING SYSTEM

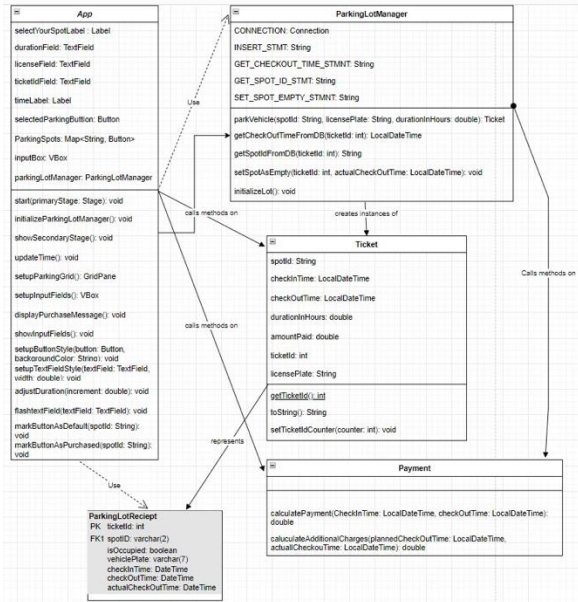


Constraints

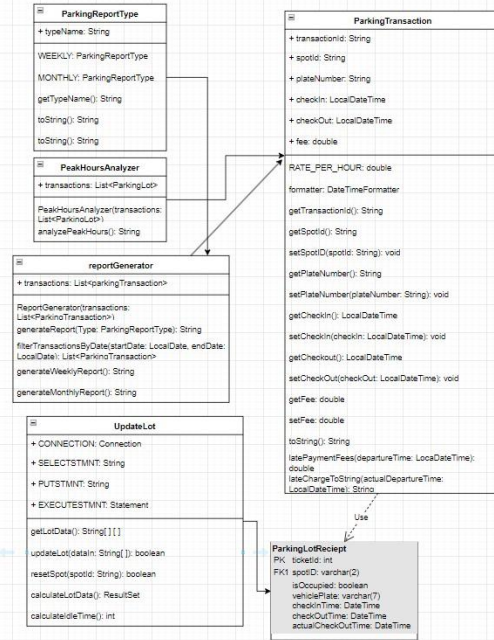
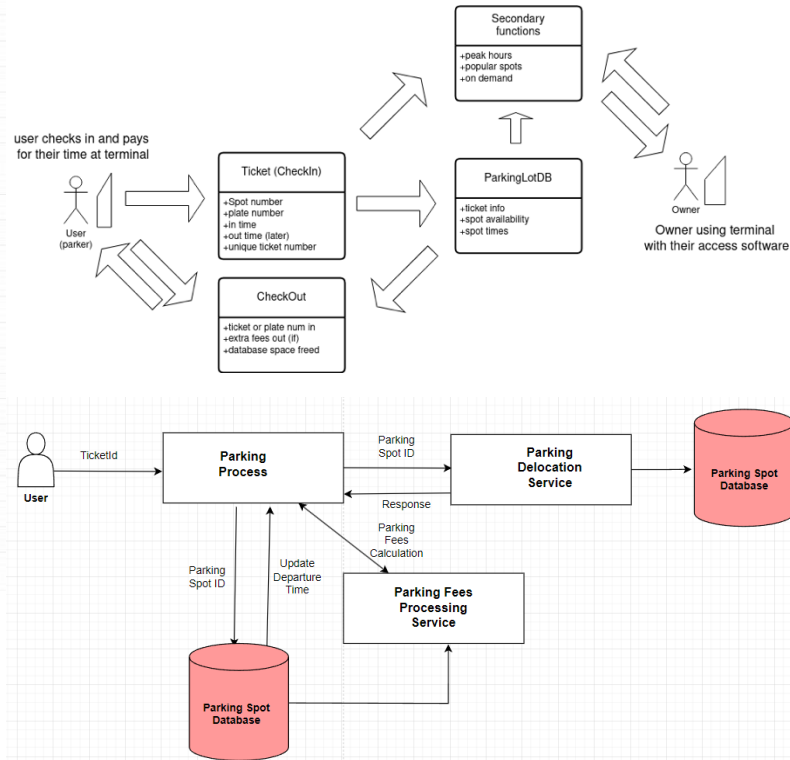
- Java and GUI Limitations: The project is developed within the confines of Java's capabilities and the graphical user interface, focusing on optimizing these technologies for the best user experience.
- Maximum Car Capacity: Designed to accommodate up to 40 cars, the system ensures efficient space utilization and management within the parking area.
- Input Validation: Incorporates rigorous input validation mechanisms to ensure accuracy in parking spot selection and license plate information entry.
- Java for System Logic: Utilizes Java for backend processing, leveraging its robust features for system logic implementation and operation.
- User-Friendly GUI: A graphical user interface is central to the project, designed to facilitate easy navigation and interaction for all users.
- Transaction Security and Efficiency: Ensures secure and efficient processing of transactions, safeguarding user information and facilitating quick payments.
- Operational Framework for Peak Times: The system's design considers peak operational times, aiming to maintain high service quality without compromise.



Architectural Design

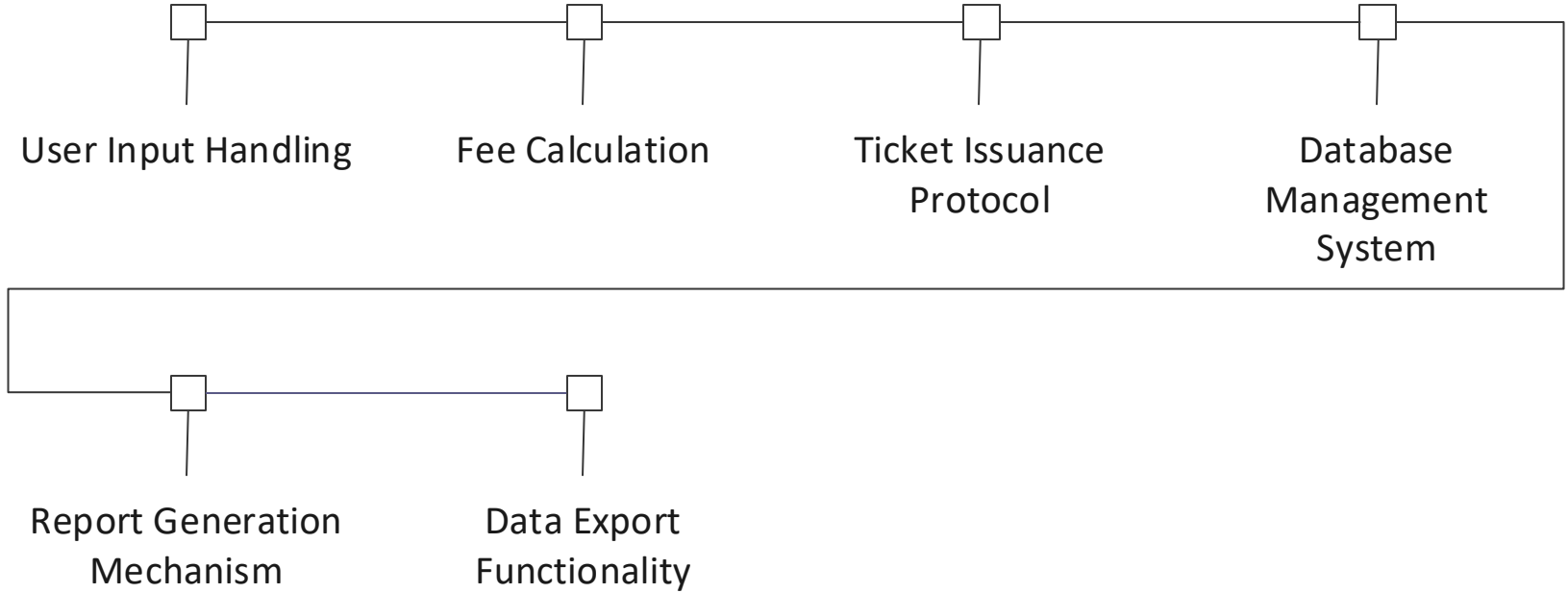
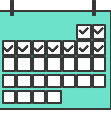


Primary/Main Functions



Secondary Functions

Implementation



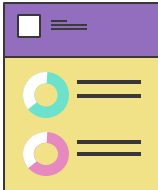
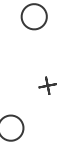
Testing

- Unit Testing Protocol: Conducts targeted tests on individual components to verify their functionality before integration into the main system.
- Integration Testing Process: Executes systematic tests on combined application modules to ensure seamless interaction and data flow between them.
- User Acceptance Testing Strategy: Implements realistic scenarios to validate the system against user requirements and expectations in the final testing phase.

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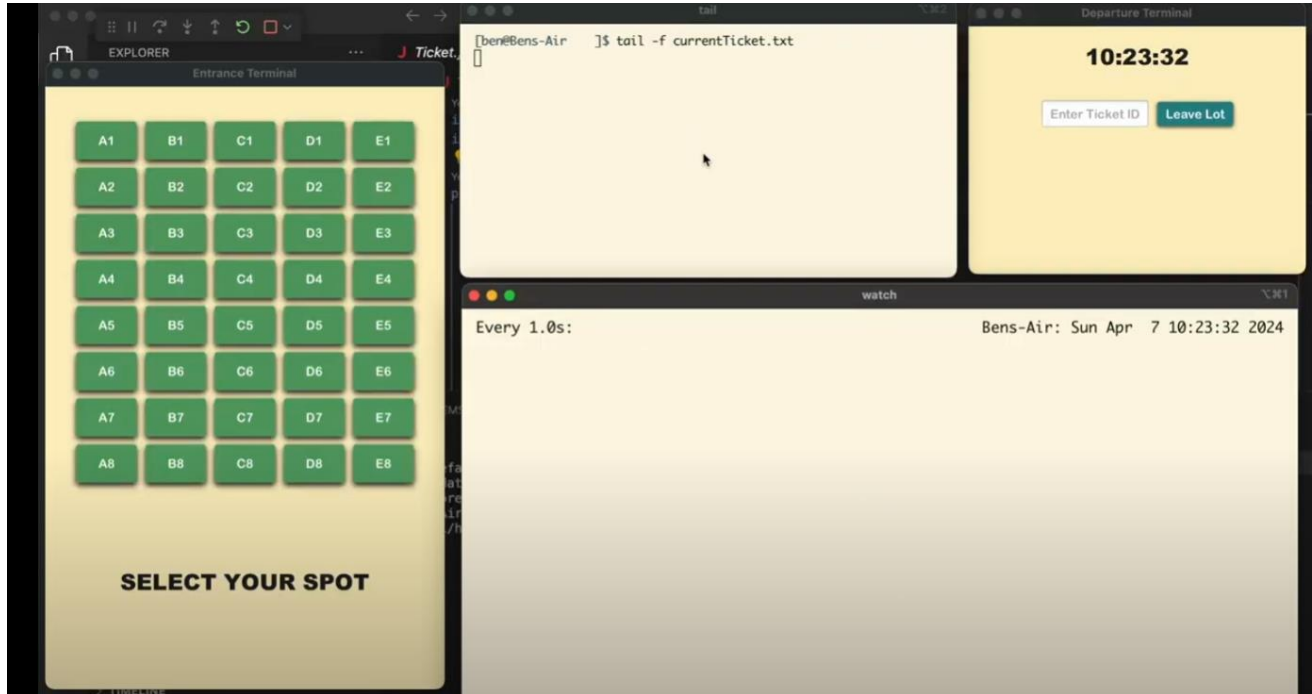
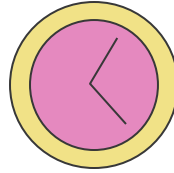
Progress Report

Over the past week, our team has made significant strides in the development of the Parking Payment System, focusing on both user-facing functionalities and backend processes. Here's a brief rundown of our progress:

- Enhancement of Secondary Functions: Mohammed Kashif Ahmed and Patrick Wilson made notable advances in database management and report generation, crucial for the system's analytics and administrative oversight.
 - Development of User Interactions: Naman Verma and Ben Chase diligently worked on refining the JavaFX interface, ensuring intuitive parking spot allocations and payment processes.
 - Adoption of Pair Programming: Our development strategy involved pair programming to efficiently tackle tasks while minimizing the risk of merge conflicts, fostering a highly collaborative environment.
 - Utilization of Mock Objects: To maintain momentum, mock objects were used to emulate dependencies, allowing seamless progress alongside the development of dependent components.
 - Strategic Team Meetings: Regular synchronization meetings were conducted to align our design approaches and maintain consistency across the system's architecture.
 - Transparent and Accountable Collaboration: Through the use of GitHub, we've ensured that each team member's contributions are transparent and traceable, promoting accountability within the team.
- × The combination of strategic planning, collaborative techniques, and rigorous testing has pushed the project closer to our goal of delivering a seamless parking payment solution.

Video Demonstration

Video Demonstration Link





Conclusion

In conclusion, our presentation has provided a comprehensive overview of the **Parking Payment System**, encapsulating our mission to deliver a user-friendly, efficient, and technologically advanced parking solution. We have delved into the project's core objectives, the intricacies of its design, and the notable progress we have made to date.

Looking ahead, we anticipate future enhancements that include the integration of more dynamic payment options, scalability to accommodate increased vehicle capacity, and the potential for a mobile app extension.

As we draw this presentation to a close, we invite our audience to engage with us in a **Q&A session**.

