Task 2 – Context Sources



**Project**

CSE6224 Software Requirement Engineering   
Term 2510

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| **Tutorial Section** | TT8L |
| **Group** | Group E |
| **Project Title** | Campus Ride-Sharing Platform with  Parking System Integration |

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## 1.0 System Context Overview

The platform connects university users through a carpool coordination tool with real-time parking data and verified access. It communicates with parking databases and ID authentication systems.

## 2.0 Context Objects

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| **Context Object** | **Type** | **Description/Interaction** |
| MMU Single Sign-On (SSO) | Digital ID System | * Authenticates only current students, staff, and faculty for registration/login (User Onboarding & Digital ID Verification) |
| University Parking Database | External System/API | * Provides real-time parking occupancy data (general vs. carpool-only zones) for map and reservation features |
| Mobile App Interface | User Interface | * iOS/Android front-end through which users view rides, parking maps, notifications, chat, and rewards |
| Notification Service | Messaging Service | * Push notifications for ride confirmations, cancellations, parking reservations, and incentive milestones |
| Carpool Matching Engine | Core Business Logic | * Matches ride offers and requests; drivers manually approve/decline passenger joins (Ride Offer & Request) |
| Reward Points Service | External Service | * Tracks points earned/redeemed for parking priority, bookstore vouchers, meal discounts, and leaderboard badges (Parking Availability & Incentives) |
| In-App Chat Service | Communication Module | * Enables matched drivers/riders to coordinate pickup/drop-off details (Communication & Notifications) |

## 2.1 UML Context Diagram

A diagram of a flowchart

AI-generated content may be incorrect.

**Figure 2.1**: Campus Ride-Sharing Context Diagram

The diagram above illustrates the **Campus Ride-Sharing Platform**, showcasing the interaction between core system components, external services, and stakeholders. At the center of the system is the **Carpool Matching Engine**, which processes ride requests and offers from users, including students, staff, and lecturers—who access the platform via the **Mobile App Interface**. User authentication is managed through the **MMU SSO**, while parking availability data is sourced from the **University Parking Database** to support efficient matching. Once rides are matched, the **In-App Chat Service** facilitates communication between users, and the **Notification Service** keeps them informed about ride statuses through push notifications. To promote engagement, the **Reward Points Service** awards points based on user activity, further enhancing the user experience. The platform’s design emphasizes seamless integration between internal modules and external systems to deliver a reliable and smart carpooling solution for the campus community.

## 3.0 Requirement Sources

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| --- | --- |
| **Source Name** | **Source Type** |
| Students | Primary Stakeholder |
| Lecturers & Staff | Primary Stakeholder |
| Parking Admin Team | Secondary Stakeholder |
| IT & Security Office | Secondary Stakeholder |
| University Leadership | Secondary Stakeholder |
| Project Team | Internal Stakeholder |
| MMU SSO / Authentication Docs | Existing Documentation |
| Parking System API Docs | Existing Documentation |
| Kumpool | Existing System |