Grable's digital platform is engineered to enable and manage the interaction between two distinct user categories: restaurants and diners. Each category must create a secure account, providing a unique identifier and essential contact information, including phone and email. Restaurants are further defined by their geolocation data, encapsulating address, city, state, and postal code, and a dynamic menu system. This menu system is a database of menu items, each uniquely identified and described by name, ingredients, dietary specifications, category, price, and availability. The system allows for CRUD operations on these items, enabling real-time menu management.

Diners are characterized by their profiles, which include dietary preferences and a digital wallet containing various payment methods. These methods are complex data types that store not only the payment method but also transaction details. Diners engage with the platform by browsing menus and placing orders. Orders are discrete entities within the system, each with a unique identifier, a reference list to menu items, a timestamp, a table number, and status indicators for order and payment tracking.

The payment processing subsystem is an integral part of the platform, interfacing with various payment services and ensuring secure transactions. It records transaction details, including the amount, payment method, and status, and handles funds transfer to the restaurant's account, net of Grable's commission.

The platform's architecture is designed to focus on security, incorporating both authentication and authorization mechanisms. It supports real-time data processing and user customization, with a notification system to inform users of order and payment status updates. The backend is scalable, capable of handling an increasing number of users and transactions, and includes comprehensive logging and monitoring for performance and anomaly detection.

Technical roles within the platform include system administrators who oversee platform integrity and user support and developers who maintain and upgrade system functionalities. External systems such as payment gateways and notification services are critical to the platform's operations.

The platform's design considers various constraints, including technological limitations and regulatory compliance, and assumes a high level of user engagement and transaction frequency. Non-functional requirements such as system responsiveness, data integrity, and operational uptime are prioritized to ensure user satisfaction and platform reliability.

In summary, Grable's platform is a complex system that supports a variety of interactions between users and the system itself, designed to be secure, scalable, and responsive. The system's functionality encompasses user account management, real-time menu updates, order processing, and payment transactions, all within a framework emphasizing user experience and operational efficiency.