For the state chart, based on the system description, we can define the following elements:

1. **States:**
   - 1.1. **LoggedOut:** The starting point where users are not logged in.
   - 1.2. **LoggedIn:** Users successfully log in.
   - 1.3. **MenuView:** Diners view the menu.
   - 1.4. **OrderProcessing:** Managing order placements and updates.

2. **Events:**
   - 2.1. **login:** User attempts to log in.
   - 2.2. **logout:** User logs out.
   - 2.3. **viewMenu:** Diner accesses the menu.
   - 2.4. **placeOrder:** Diner places an order.
   - 2.5. **updateOrder:** Restaurant updates an order status.
   - 2.6. **paymentInitiated:** Start of the payment process.
   - 2.7. **paymentCompleted:** Completion of the payment process.

3. **Guards:**
   - 3.1. **isAuthenticated:** Checks user authentication.
   - 3.2. **hasPaymentMethod:** Verifies diner's payment method.
   - 3.3. **canUpdateOrder:** Restricts order updates to the restaurant.

4. **Actions/Operations:**
   - 4.1. **AuthenticateUser:** Validates user login.
   - 4.2. **DisplayMenu:** Shows the menu to diners.
   - 4.3. **ProcessOrder:** Manages order lifecycle.
   - 4.4. **InitiatePayment:** Begins the payment process.
   - 4.5. **CompleteTransaction:** Finalizes payment and updates order status.

5. **Composite State:**
   - 5.1. **OrderManagement:** Includes states and transitions related to order handling.

6. **History Pseudo-State:**
   - 6.1. **RememberLastState:** Remembers the last user state for a smoother experience upon re-logging in.

The process typically starts with user login, progresses through menu viewing or order processing, and ends with payment transactions. The system accommodates different pathways for diners and restaurants, with specific actions and guards to ensure proper access and functionality.