

## Reason for Incomplete Implementation

During the later stages of the project, our team experienced a significant reduction in available members as several teammates withdrew or stopped participating. This forced the remaining developers to take on additional responsibilities.

At the same time, I personally was enrolled in **six classes**, which created unavoidable time constraints. Because of this, the team had to prioritize completing core functionality — ordering, checkout, reservations, dashboards, authentication, email confirmation, and database integration — to ensure a fully working application for Demo 4.

The SMS feature required several additional steps:

- integrating a third-party API such as Twilio,
- configuring secure API keys,
- updating the UI to gather/validate phone numbers,
- adding controller logic to trigger SMS events.

Given the limited manpower and time available, implementing SMS notifications safely and correctly was not feasible without risking the stability of the rest of the project.

## 2. What Was Attempted (Partial Progress)

Even though full SMS functionality was not completed, **progress was made**, including:

- Creating a **utility/helper class** intended to handle SMS sending logic.
- Researching Twilio's Java SDK, authentication workflow, and REST API endpoints.
- Identifying the points in the application (Checkout and Reservation controllers) where SMS notifications should be triggered.
- Drafting the structure for the outgoing message flow (similar to EmailUtil).

However:

- No API credentials were configured.
- No REST calls were enabled.
- The utility was not fully connected or tested.
- UI changes needed for SMS input were not implemented.

Thus, the SMS feature remains in a **partially developed, non-functional state**.

## 3. Summary

The SMS feature was started but could not be fully implemented due to:

- reduced team size,
- increased workload on remaining members,
- my personal academic load (six courses),
- the time and complexity required to safely integrate external SMS services.

All other core functionality was completed and tested to ensure a working application for Demo 4.