

EECS 2311 Take Home Assignment

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Section: Z

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March 24, 2025

End-to-End Manual Testing

User Story 4: System: Send appointment reminders

Test Case 1: Automatic Reminder for Upcoming Appointment

1. Login as admin/developer
2. Create a test appointment scheduled for the next day
3. Set the system clock forward to 24 hours before the appointment
4. Trigger the reminder job (manually or wait for scheduled run)
5. Check the customer's email for a reminder notification
6. Verify the reminder contains correct appointment details

Expected Result: Customer receives an email reminder with accurate appointment details.

Test Case 2: SMS Reminder Configuration

1. Login as admin
2. Navigate to system settings
3. Enable SMS notifications
4. Create a test appointment
5. Set the system clock to trigger the reminder
6. Check if SMS notification is sent to the customer's phone

Expected Result: Customer receives an SMS reminder with appointment details.

Test Case 3: Reminder for Rescheduled Appointment

1. Login as staff
2. Reschedule an existing appointment
3. Verify an immediate notification is sent about the change
4. Set the system clock to 24 hours before the new appointment time
5. Check if a reminder notification is sent

Expected Result: Customer receives both an immediate notification about the reschedule and a reminder before the new appointment time.

Test Case 4: Customer Notification Preferences

1. Login as customer
2. Navigate to notification preferences
3. Disable email reminders
4. Create a new appointment
5. Set the system clock to trigger reminders
6. Check if email reminder is suppressed

Expected Result: No email reminder is sent when the customer has disabled this preference.

Bug and Issue Reports

Bug 1: Reminder Timing Issue

Summary: Appointment reminders are sometimes sent at incorrect times.

Steps to Reproduce:

1. Create an appointment for 3 PM
2. Monitor when the reminder is sent

Expected Behavior: Reminder should be sent exactly 24 hours before the appointment time.

Actual Behavior: Reminders are sometimes sent 24 hours from the booking time, not 24 hours before the appointment.

Severity: Medium

Bug 2: Missing Appointment Details in Reminders

Summary: Some appointment details are missing from reminder notifications.

Steps to Reproduce:

1. Book an appointment with special instructions
2. Wait for or trigger the reminder
3. Check notification content

Expected Behavior: All appointment details including special instructions should be included.

Actual Behavior: Special instructions are missing from the reminder.

Severity: Low

Code Review

Code Smells Checked

- Long methods
- Comments (missing or obsolete)
- Hard-coded values
- Duplicated code
- Inappropriate intimacy
- Feature envy
- Data clumps

Code Smells Detected

1. Hard-coded Reminder Times in NotificationService

Reminder timing is hard-coded to 24 hours before appointments with no configuration option.

Recommendation: Make reminder timing configurable via system settings.

2. Duplicate Email Templates

Similar email templates are duplicated across different notification types.

Recommendation: Implement a template system with shared components.

3. Tight Coupling between NotificationService and EmailService

The notification system is tightly coupled to specific notification channels.

Recommendation: Implement a notification strategy pattern to allow for different notification methods.