**Sprint 2 Final – Send Notification Feature**

**Course**: CIS 234A – PCC  
**Team**: 404 – Team Not Found  
**Developer**: Sayan Tajul  
**Feature**: Send Notification Page  
**Date Completed**: 06/04/2025

**Overview**

The **Send Notification** feature allows food pantry managers to quickly send rich-text emails with optional file or image attachments to all subscribed users. This functionality is critical for keeping students informed about food availability, events, and resources provided by PCC’s free food pantry service.

This GUI was built with Python’s tkinter framework using N-Tier architecture. It supports real-time message creation, template loading, tag insertion, and attachment previewing, ensuring a user-friendly and dynamic communication experience.

**✅ What This Feature Does**

* **Template Integration**: Managers can select from pre-made templates. Selecting one auto-fills the subject and message fields.
* **Subject and Message Editing**: Text boxes allow freeform input and editing for email subjects and bodies.
* **Dynamic Tag Insertion**: Tags such as {Location} or {Time} can be inserted directly at the cursor’s position within the message.
* **Rich-Text Formatting**:
  + **Bold**, *Italic*, and **Underline** via formatting buttons.
  + Text **color** can be selected and applied using a dropdown (e.g., red, blue, green).
* **Attachment Handling**:
  + Add or remove attachments via file dialog.
  + Preview the **first six image attachments** as thumbnails before sending.
* **Email Delivery**:
  + Sends an email to all active subscribers using Gmail SMTP.
  + Logs the subject, message, number of recipients, and attached files into the database.
* **Confirmation Dialog**:
  + Users must review and confirm the final message before sending.

**Changes from Sprint 2 Part 2 to Sprint 2 Final**

The following enhancements were implemented between Sprint 2 Part 2 and Sprint 2 Final:

| **Feature Area** | **Sprint 2 Part 2** | **Sprint 2 Final Improvements** |
| --- | --- | --- |
| **Tag Insertion** | Required clicking a separate "Insert Tag" button | Tag auto-inserts at the cursor upon selecting from dropdown |
| **Attachment Preview** | No visual feedback for images | Image thumbnails (up to 6) now display below the attachment box |
| **GUI Layout** | Cramped and unaligned buttons | Completely reorganized layout: content center + sidebar buttons |
| **Sidebar Buttons** | Not well-positioned and overlapping | Now aligned to the right beside the form without displacing layout |
| **Code Quality** | Repetitive code blocks | Organized into frames and rows for better maintenance |
| **Window Size** | Was too small (750x750) | Upgraded to 1200x800 to support 1080p experience |

**Challenges Encountered**

* **Layout Conflicts**: Buttons on the right were initially displacing the message box and content to the left. This required restructuring the layout using tk.Frame() and grid() vs pack() hybrid alignment techniques.
* **Image Preview Errors**: Handling thumbnail rendering without crashing due to unsupported formats or broken paths was resolved using PIL's ImageTk.
* **Controller Navigation**: Home button was broken when testing standalone. Issue fixed by verifying controller linkage from pantry\_app.py.
* **Testing**: Confirmed formatting, tags, attachments, and previews all worked together with Gmail SMTP and DB logging.

**Directory Info**

The files involved for this feature include:

* send\_notification.py – GUI Frame
* notification\_logic.py – Email logic
* db\_manager.py – Database logging and fetch operations
* theme.py – Colors and fonts
* config.ini – Secure email credentials
* manager\_welcome.py – Launches Send Notification page
* docs/Sprint2\_Final\_Report.docx – This documentation

**Conclusion**

This feature provides an essential communication tool for food pantry managers. The Send Notification system is now visually polished, feature-complete, and aligned with accessibility and usability standards. All Sprint 2 requirements have been fulfilled with additional visual and UX enhancements added based on feedback and testing.