Overview

This project highlights a real-world ETL process built in Excel to clean and transform a CRM data export for use in an automated email campaign. The goal was to drive End of Course Survey (EOCS) participation by targeting currently active students with tailored communication.

Challenges

The CRM export contained student name, number, and email on one worksheet—ideal for automation.

However, the data appeared encrypted or obfuscated, likely to minimize exposure risk in the event of a data breach.

This introduced hidden characters and inconsistent formatting that broke Excel features like filters and VLOOKUP.

I also needed to integrate notes from previous manually maintained reports for context.

ETL Process

Extract:

Received raw CRM export from a data analyst.

Transform:

Copied the data into a clean worksheet to strip formatting.

Applied CLEAN() and TRIM() to remove hidden characters and excess whitespace.

Used VLOOKUP to import relevant notes from historical tracking.

Filtered for currently active students who had not received EOCS-specific outreach in the past year.

Load:

Built an HTML email template directly within Excel.

Executed an automated email campaign to over 200 filtered student records using Outlook scripting.

Outcome

Successfully transformed unusable CRM data into a clean, actionable dataset. Enabled strategic outreach that had previously been impossible, improving EOCS participation and student engagement. This project demonstrates hands-on ETL experience, Excel data wrangling, logic-based filtering, and scalable automation.

Technical Complexity & Debugging Process

This was my most technically advanced automation project to date. Although the concept of cleaning and merging datasets was familiar, the execution required deep troubleshooting. The CRM export was riddled with hidden characters, inconsistent formatting, and pseudo-encrypted values that broke Excel functions like VLOOKUP and filters. It took nearly a full day of trial-and-error debugging to trace the issues and correct them. I used Excel formulas like CLEAN(), TRIM(), helper columns, manual validations, and step-by-step testing to isolate and fix the errors.

The end result was a clean, functional dataset that powered a fully automated HTML email campaign targeting students who hadn’t received EOCS-specific contact in over a year.