# Student Academic Success Center - Using Gemini and Apps Scripts to create Process Efficiencies

## Project Introduction and Background

The Student Academic Success Center (Success Center) is a key provider of student-facing services at Carnegie Mellon University, coordinating vital programs across five functional units: Disability Resources, Student Success & Persistence, Learning Support, Communication and Language Support (CLS), and the Operations Team. The Success Center has experienced a period of significant growth in its services and the number of students served since its formation in 2019. The center's mission to consolidate and enhance academic support services has led to increased demand and complexity and has caused a strain on existing resources and operational models.

The Business Innovation Office was engaged to perform a process assessment and to identify recommendations, opportunities, and a roadmap for optimizing the operational processes of the Success Center.

## The Challenge & Our Approach

As a result of the process assessment, it became evident that creating and managing schedules of student employees is one of the common operational challenges across the units. To support the Success Center service offerings, the center recruits, trains, and manages a dynamic workforce of 220 to 250 student employees annually. The process by which schedules for the services offered by the Success Center are generated is driven by student employee class schedules and availability. Each team takes a somewhat consistent approach in the type of information collected by the student employees to generate the work schedules and the schedules offered to students via WC Online, where applicable. However, regardless of the schedule that is being created, the effort is manual and can be somewhat of a puzzle to ensure that all conditions (number of hours, course preferences, available days/times, etc.) are met successfully. Once the puzzle has been completed, it is not unusual for tutors/consultants/etc. schedules to change, requiring re-working the puzzle so that it continues to meet all conditions.

Consider two examples:

- Peer Tutoring - manually creating schedules in Excel for over 100 peer tutors based on preferred courses, schedule availability and workload constraints takes approximately 4 hours and increases the risk of scheduling errors, such as misassigning courses or exceeding allowed hours.
- Communication and Language Support - manually creating schedules for Communication and Language Support consultants is a time-consuming challenge due to balancing multiple variables, including consultant availability, individual roles, and levels of experience.

The Business Innovation Office collaborated with two specific teams to generate a solution that would improve the process through the use of Google Sheets and Gemini generated Apps Scripts.

## Benefits & Outcomes

In an attempt to generate efficiencies with respect to time and to eliminate/reduce mistakes, Gemini was utilized to create a variety of AppsScripts that were added to a Peer Tutoring Google Sheet. The Google Sheet contained the responses from the various Google Forms used to capture tutors, course preferences, and tutor availability. As a result of the scripts that were created, the Assistant Director of Peer Tutoring is able to generate:

- Core Scheduling and Calendar Views - Consolidates raw availability into a master weekly matrix, breaks it down into daily views, generates individual tutor calendar blocks, and maps available tutors to courses by time slot.
- Course Mapping and Allocation Tools - Matches tutor preferences with course demand, enforces allocation caps and a 3-pick limit per tutor, auto-sorts primary and backup candidates into course columns, and tracks total course assignments.
- Tutor Capacity and Limit Tracking - Monitors tutor workloads by categorizing staff into two groups based on weekly scheduled hours: those over 10 hours and those at or under 10 hours.
- Coverage and Gap Analysis Reports - Identifies staffing gaps by comparing course requirements against tutor preferences, specifically flagging offered courses that received no top-pick selections.

Incorporating the use of the AppsScripts into the business process, brought the amount of time spent creating the Peer Tutoring Schedule from 4 hours to 15 minutes.

The CLS team is planning to adopt a similar technique. Via BIO and CLS collaboration, Gemini was used to generate scripts that were incorporated as AppsScripts into the Google sheet resulting from Google Form responses. These scripts will provide the CLS team with the ability to generate the following:

- Schedule and Session Planners - Weekly grids displaying assignments of consultants with specific roles to consulting days/timeslots based on submitted availability.
- Individual and Team Availability Grids - Individual consultant schedules for system entry validation, team-wide meeting availability grids, and a master matrix that tracks shifts by comparing assigned work directly against raw form responses.
- Master Roster and Workload Auditing - A master roster detailing consultant roles, quotas, total assigned hours, and time blocks, supported by an automated audit sheet that verifies individual workload accuracy.
- Scenario Testing and Impact Analysis - A setup table for inputting custom quotas, status shifts, or slot unavailabilities to generate hypothetical planning scenarios, paired with side-by-side reports that track net hour differences, shift changes, and quota variances against the baseline schedule.

The expectation is that the revised process will create efficiencies and give time back to the CLS staff allowing them to focus on student facing work vs. administrative tasks. It is also expected that the tool will allow for more agility and the ability to respond to changes in consultant schedules.

## Conclusion

By partnering with the Business Innovation Office to leverage Gemini-generated Google Apps Scripts, automating the intricate puzzle of matching student availability, preferences, and workload constraints turned a high-risk, 4-hour manual scheduling process for Peer Tutoring into a streamlined 15-minute task. As this innovative approach expands to Communication and Language Support (CLS), the automation will drastically cut administrative burdens, improve schedule agility, and allow center staff to dedicate more time directly to supporting student success.