WC SCHEDULER

User Guide

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INTRODUCTION

This application (WCScheduler) was developed by undergraduate students C. Woodbury, S. Rajkarnikar, and A. Tomes as a part of the spring 2022 section of Software Engineering at Coe College. While originally designed for the Coe College Writing Center, it is customizable to be used in other writing centers. WCScheduler is designed to be an interface between a writing center Consultant or an Administrator, and an algorithm to automatically generate a work schedule based on information provided by the Consultants and Administrators.

In this manual, we will go over the initial setup of WCScheduler, including gathering Consultant data; creating a top-level admin account; customizing the graphics of WCScheduler; and generating an initial schedule. We will include a guide for all buttons available to an Administrator, along with their functions. We will also go over the limited functionality of a Consultant account.

All code for WCScheduler is hosted on GITHUB at:

https://github.com/TheMrCam/CS390-WritingCenter

and includes a file for developers to read to assist in the further development of it. For those who just wish to run the program, and not modify it, the application included will run as defined. Any modifications to the code may change the input file formats expected, the operation of WCScheduler, and/or the appearance of the application and associated files.

Even if you have previously used Google Forms to get a downloadable version of responses, we recommend reading the Customizing the Form Section. This details information that may be specific to your institution. You may skip the rest of the Gathering Consultant Data section.

GETTING STARTED

Gathering Consultant Data

Before first launching the application, you should gather user data from your Consultants. Alongside this application, we have created a Google Forms questionnaire, in order to ensure the gathered information is in the format WCScheduler expects.

In order to make a copy of the Form, follow this link:

https://docs.google.com/forms/d/1wb91WNdsL8lV-4nkZTJFtGrC-eHdKzHBLxStnOtxyeY/copy

Customizing the Form

For this form, you should change the fields provided to match your college's needs. This guide will explain how to change some relevant collectors.

Email Collected

By default, the Form collects email addresses to use to generate unique usernames. Currently, it is set to accept ANY email address, but you should specify to responders to use their school-provided email address. There are two methods: using your organization's limitation settings; and the honor system.

Some organizations provide the ability to restrict responses based on the email address signed in, while others do not. If your organization does not, then unaffiliated people may provide invalid responses.

If your organization provides the option to limit responses to those within the organization:

1. Go to the settings page
2. Click the arrow next to "Responses"
3. If available, turn on "Restrict to users in <organization> and its trusted organizations"

Otherwise, to discourage invalid responses:

1. Click the “Form description” text editor underneath “WC Form”
2. Type “Please only enter <organization> email addresses”

Majors and Minors

Included in the Form is a non-comprehensive list of possible majors and minors. These are used to show an Administrator the demographics of the Consultants. If so desired, this list can be edited based on the offerings of your organization. The list includes an “Undeclared” option for those who do not know their major.

Requested Hours

By default, the requested hours must be a whole integer between 1 and 12. This can be changed by clicking the question, then changing the integers provided.

Availability

By default, the Form includes all hours of the day, for every day of the week. EVEN IF YOUR WRITING CENTER IS CLOSED, LEAVE THE DAY IN THE FORM. If any day is removed, then the accounts will not be generated when importing.

For the times, find the earliest time your writing center opens during a week, and the latest time it closes, and remove all times outside of that block.

EXAMPLE: *if your writing center is open from 8:00am-9:00pm Monday-Wednesday, 6:00am-9:00pm Thursday, 10:00am-3pm Friday, and is closed on the weekend, then you would delete all times BEFORE 6:00am, and AFTER 9:00pm.*

This will allow Consultants to select times when your writing center is closed; but within WCSchedule, an Administrator can define the hours the writing center is open, and only those hours will be scheduled.

To delete a time, click the “X” next to the time to remove it.

Collecting Responses

In order for responses to be collected, you MUST do the following to turn on responses:

1. Go to the “Responses” tab
2. Turn on responses by toggling the switch next to “Not accepting responses”

Saving the Responses

After receiving nearly all of the expected responses, or after a predetermined amount of time, the responses must be saved onto the computer with WCScheduler.

1. Just above the response switch, there is a Google Sheets logo. Clicking this will open a dialog box.
2. Select “Create a new spreadsheet” and enter a name for the spreadsheet, then click the orange “create”. A new window should appear in your browser with the spreadsheet.
3. Select “File” in the upper left corner, then “Download” > “Comma Separated Values (.CSV)”
4. Enter a name for the CSV file, then save it. (in the guide, we will reference it as WCConsultantData.CSV)
5. Open your file to ensure it saved properly

Proper formatting should look like this:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Timestam	Email Add	First Nam	Last Name	Year?	Semester:	Majors	Minors	Number o	Hours I ca	Hours I ca	Hours I ca	Hours I ca	Hours I ca	Hours I ca	Hours I can work [Satu	
2	#########	jlennon@	John	Lennon	Senior	7	Physics, Psychology		12		9:00am-10	8:00am-9:	8:00am-9:	10:00am-1	11:00am-1	11:00am-12:00pm, 1:00	
3	#########	jsmith@n	James	Smith	Junior	4	Biology		10	11:00am-1	1:00pm-2:	3:00pm-4:	8:00am-9:	11:00am-1	10:00am-11:00am, 11:00am-12:00		

Now you have the file needed to create the accounts within WCScheduler, with relevant and accurate information to your organization. After the CSV-generated accounts are created, more can be manually added within the program.

Initializing WCScheduler

Resource Files

Photos

Presently, all photos used in the WCScheduler are icons for Coe College’s Writing Center. You can change these resource files, or you can remove the Coe College ones. The photos are purely for cosmetic purposes.

Account Database

Upon the first startup of WCScheduler, it will ask for a file for the Account Database. This file is the one generated by the Google Form. We recommend keeping the Account Database Resource file in the same folder as WCScheduler. To designate a file, simply select the file in the popup that appears upon opening WCScheduler for the first time. It will then be saved within the program, in a hidden file to prevent tampering.

Schedule File

Upon startup, WCScheduler will prompt you to select a schedule file. We recommend keeping this resource file in the same location as the Account Database Resource file. It is good practice to create a new blank .CSV file using excel spreadsheets, as any preexisting data in the file will be overwritten with the schedule that is generated. The selection is the same as with the Account Database Resource File. This file will also be saved as hidden, and the only way to retrieve it will be through the "Save as .CSV" button.

Color Scheme

The current color scheme of WCScheduler is chosen to mirror that of Coe College's Writing Center, but the values for the all colors can be changed if desired.

Admin Account

Administrator accounts are accounts which have access to the full functionality of WCScheduler, and have the authority to change accounts, the schedule, and the settings for the schedule generator. Administrators should be trustworthy individuals. To see how to instate another Administrator account, see the Administrator Account Functions Account Database section.

Defaults

When first launching WCScheduler, it will prompt input for an Administrator username and password. This account will persist even if you clear the account database. This top-level Administrator account should be made by the head of the

Writing Center, and its password should be kept in a secure location.

Admins Through CSV

It is not currently possible to add an Administrator account using the .CSV file. However, by using the edit account screen, an Administrator can make any previously added account into an Administrator. See the Notes on Administrator Accounts Section.

Default Consultant Password

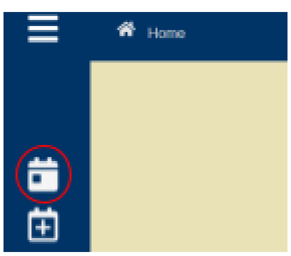
The WCScheduler will assign a default password to any Consultant account defined within the database. This password is editable by an admin. Upon the first login for a Consultant account, it prompts the user to input a new password. Passwords can be reset by an Administrator, or modified within the account edit screen.

Schedule Settings

There are default settings included in the program, but we recommend changing them before generating a schedule. Navigate into the "Schedule Settings" page, and refer to the Administrator Settings section for details on what each setting means.

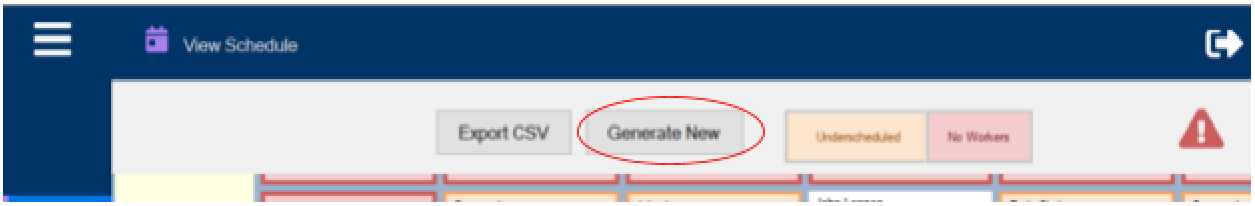
First Schedule

Now that there are Consultant accounts in the database, an initial blank schedule defined, as well as the settings for the schedule set, you are ready to create your schedule.



1. Navigate to the "Schedule View" tab using the menu bar on the left of the screen.

2. Click the "Generate Schedule" button in the top center position, and wait for WCScheduleBuilder to generate the schedule and reload Schedule View.



3. You’re done!

It really is that easy. The schedule automatically saves upon generation, and anytime you edit a shift, it is saved. See the “Schedule View” section for more details on editing and modifying an already generated schedule.

ADMINISTRATOR ACCOUNT FUNCTIONS

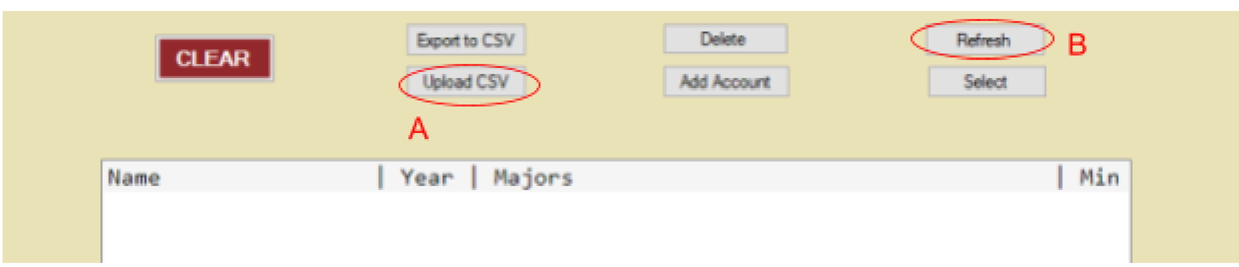
Account Management

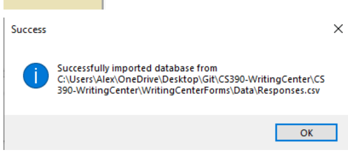
The Account Database page serves as the interface for adding or removing accounts, as well as editing current accounts.

Importing New Accounts

Through CSV

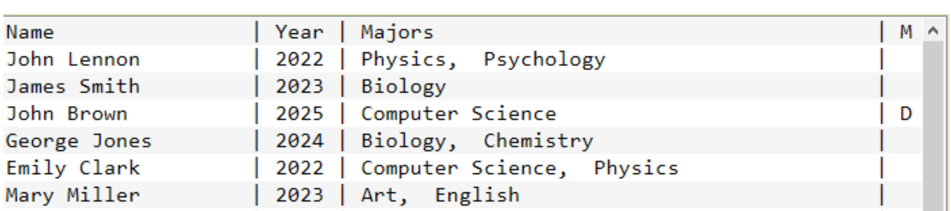
Upon initial startup, WCScheduler will request a file to define as the Account Database File. The process to mass upload new accounts via CSV is very similar, although the CSV does not need to be in the same folder as WCScheduler. These accounts are added on to the end of the database.





To upload a new CSV, click the "Upload CSV" button (A), and find your file in the file explorer. After a successful upload, you should see a pop up indicating that the upload was successful.

Click the "Refresh" button (B) to ensure the imported CSV is in the program. The data should appear in a similar format to this:

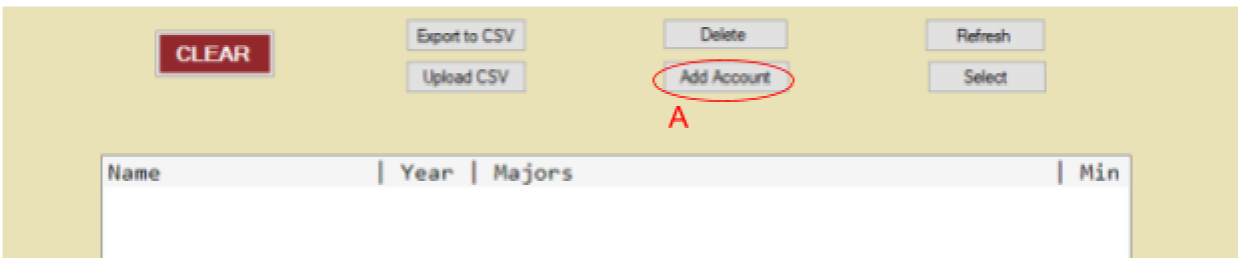


Name	Year	Majors	M
John Lennon	2022	Physics, Psychology	
James Smith	2023	Biology	
John Brown	2025	Computer Science	D
George Jones	2024	Biology, Chemistry	
Emily Clark	2022	Computer Science, Physics	
Mary Miller	2023	Art, English	
Samuel Jackson	2023	Art	F

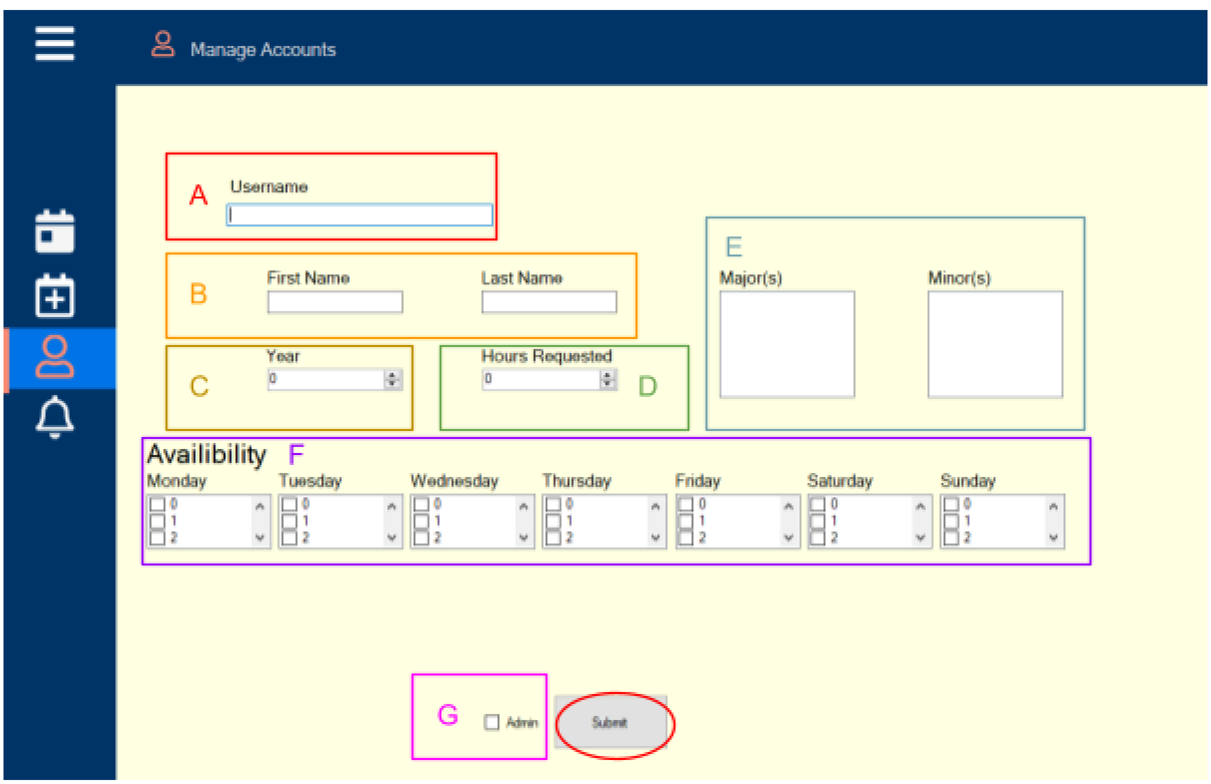
Presently, the account database checks for duplicate accounts. If consultants want to change their account information, they can change it on the google form and the CSV for the google form can be reuploaded. The newer data will overwrite the old data.

Manually

Once a database is created, then an Administrator can manually create individual new accounts using the "Add Account" button (A). If a few individuals forgot to respond to the Google Form, then this is an ideal option instead of reuploading the full responses CSV file. For what all fields mean, see Editing Accounts.



Editing Accounts



The screen for editing a preexisting account and creating a new account are identical, however, if editing a preexisting account the input fields will be populated with the account's current data. The fields mean the same thing in the "Manually Add Account" screen.

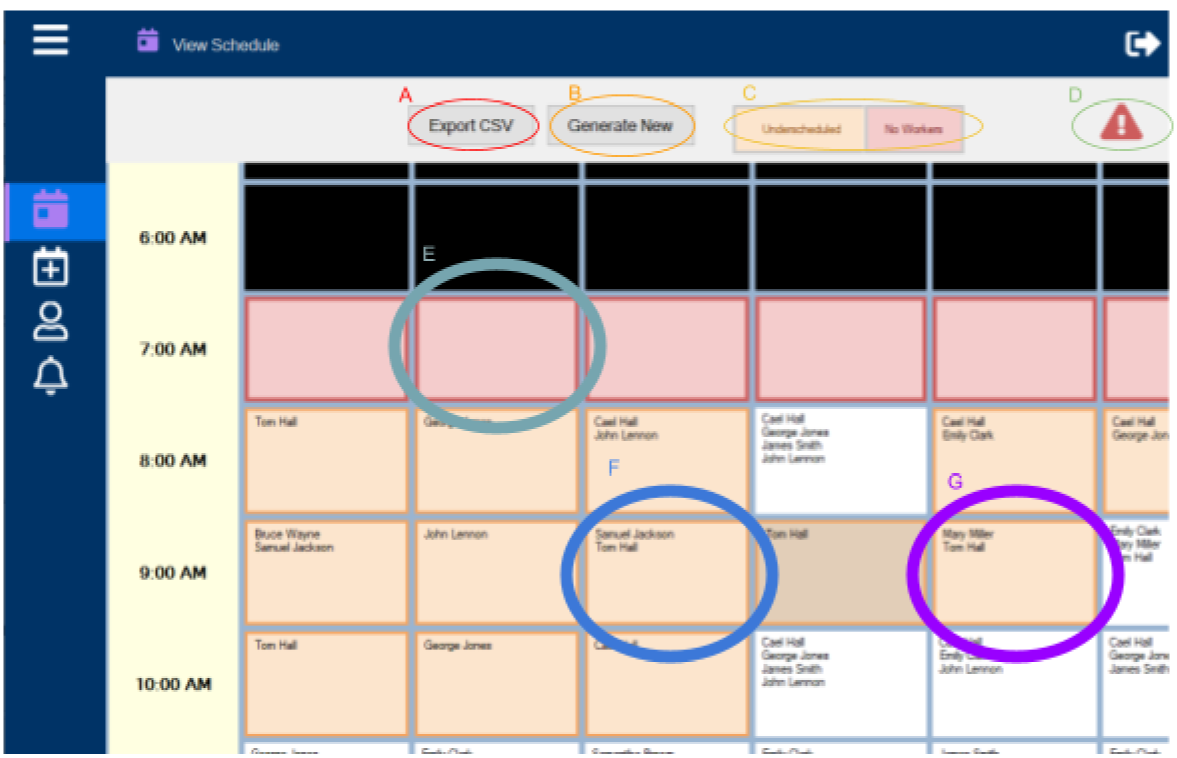
Username (A), First Name and Last name (B), and Hours Requested (D) are fairly straightforward. The majors and minors boxes (E) contain lists of majors and minors. Year (C) designates current year at your organization. The admin checkbox (G) toggles whether the account is considered an admin.

Availability (F) is a series of boxes (one per day of week) containing checkboxes indicating if the account is available at that time, alongside a number from 0–23 (indicating the hour).

Schedule View

The Schedule View page is the interface for viewing and quickly editing the current schedule, as well as saving and generating a new schedule.

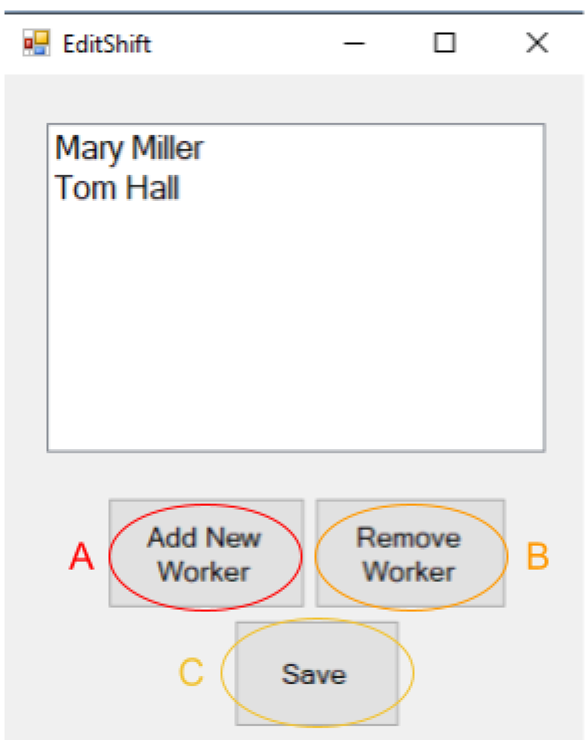
What Everything Means



Button (A), “Export CSV”, opens a file dialog to save the schedule as a CSV file. The “Generate New” button (B) creates a new schedule based on the current settings. (C) is a key for how to interpret colored shifts. Red Shifts (E) indicate that the writing center is open that hour, but no consultants were scheduled. Orange shifts (F) indicate that two or fewer consultants work that shift, so it is considered underscheduled. (D) indicates that there are problems with the schedule.

Editing a Shift

To edit a shift, click on the shift. This should open a popup window with details about the shift. For example, if we clicked on shift (G):



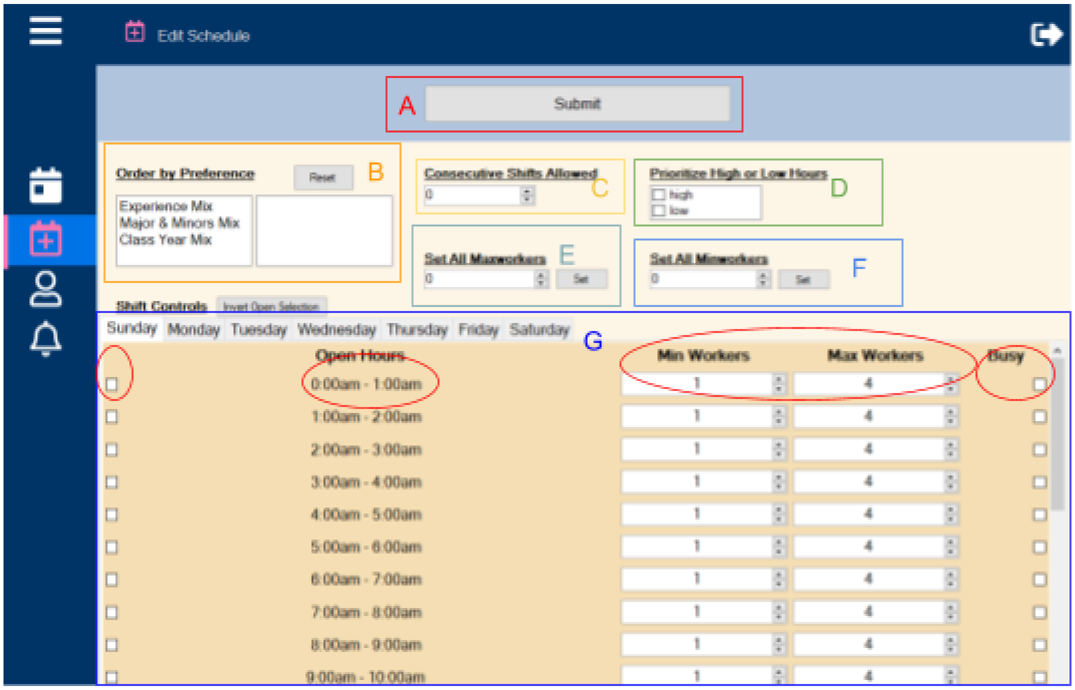
Adding/Removing Consultants

To add a Consultant, click button (A), “Add New Worker”, and type their name into the box which appears.

To remove a Consultant, select their name in the list, and then click the “Remove Worker” button (B).

After changing the details for a shift, save the edits by clicking the “Save” button (C) in the popup Shift Editor. This will automatically save the changes to the CSV for the full schedule.

Settings



What Everything Means

The "Submit" button (A) saves the currently set settings. The "Order By Preference" section (B) indicates several possible variables which can be used when generating a schedule. In order to use a variable, double click the variable (like "Experience Mix") and it will move into the right column. The variables are ordered in descending importance. To reset the boxes (move everything into the left box) click the reset button.

"Consecutive Shifts Allowed" (C) indicates the number of shifts allowed before the worker cannot work more shifts that day. Section (D) indicates whether to prioritize scheduling workers with high requested hours or low requested hours.

Section (G) allows settings to be changed for each day of the week. Navigate across days by using the tabs at the top. In each day tab, there is a list of "Open Hours" or hours which are possible in the day. The check box to the left of this column indicates if the center is open that hour. Min Workers and Max Workers sets the minimum and maximum workers for that shift, and Busy indicates whether it is considered a busy shift.

If you want to set the min workers and max workers to all be the same (for every hour every day), use boxes (E) or (F). Make sure to click the "Set" button to the right of the number entry box to save your changes.

Notes on Administrator Accounts

We assume there will not be many Administrators needed, as the schedule is expected to remain the same over the course of a few months, so there should be little need for re-creating a schedule or altering the Account Database. We also anticipate the staffing of the writing center will change frequently enough to not have many trusted Consultants who are Administrators.

With that in mind, when the "Clear Database" button is clicked, it will clear *all accounts except the top-level Administrator account*. Any Administrators added before the clear will be gone. The only way to reinstate an account as an Administrator is to have the top-level account edit or create a Consultant account to be an Administrator account.

We recognize not allowing CSV input of Administrators is painful, but this prevents any unauthorized editing of a CSV to change an account type. The process for adding new accounts is reasonably straightforward, so security was traded off for convenience.

CONSULTANT ACCOUNT FUNCTIONS

Schedule View

The Consultant accounts have a limited schedule view, which only allows them to view the current schedule. The buttons for generating a new schedule (as well as saving the schedule as a .CSV file) are removed.

A Consultant cannot click on boxes to edit shifts within the schedule viewer.