

Program Overview

The Schedule Card Creator is an application that allows the user to create, save, and export a weekly schedule image that can be posted outside an office door or dropped into a web page or a CMS such as Canvas. This program was really written for me to experiment with some PyQt functionality that is to be incorporated in a different project, but since it might be of interest to others I finished it into a schedule creation application. The program interface has three main areas.

- Layout Option window on the left.
- Schedule Item listing in the lower right.
- Schedule Card Image in the upper right.

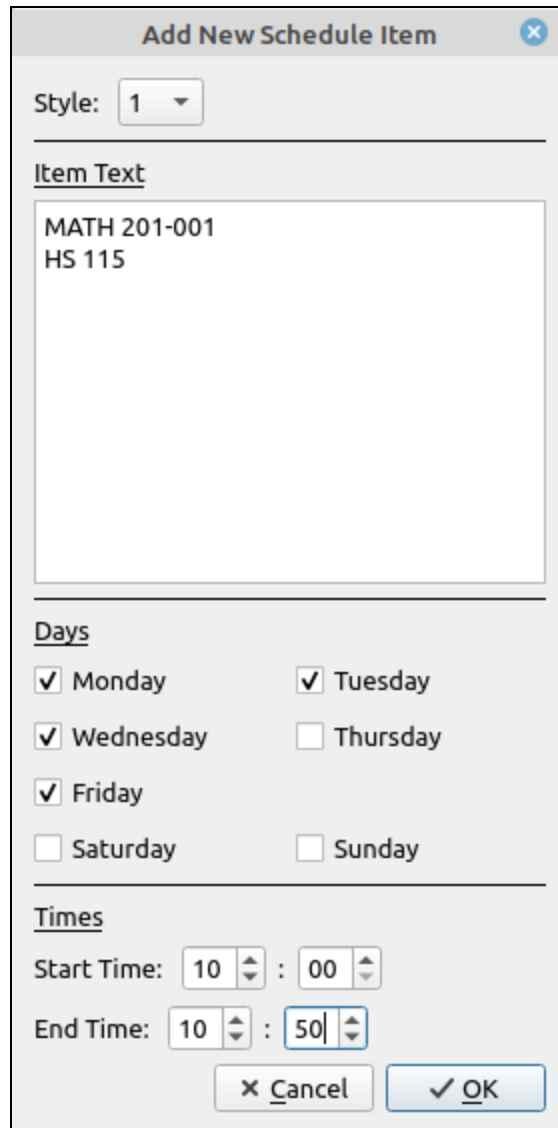
Time	Monday	Tuesday	Wednesday	Thursday	Friday
8:00	Class Prep.	Class Prep.	Class Prep.	Class Prep.	Class Prep.
9:00	Office Hour	Office Hour	Office Hour	Office Hour	Office Hour
10:00	MATH 140-003 DH 112	MATH 140-003 DH 109	MATH 140-003 DH 112		MATH 140-003 DH 112
11:00	MATH 202-002 HS 111	MATH 202-002 HS 111	Office Hour	MATH 202-002 HS 111	MATH 202-002 HS 111
12:00	Grading	Grading	Research	Grading	Grading
1:00	Lab Prep.	COSC 120-001 HS 107		COSC 120-001 HS 107	Have a good weekend!
2:00					
3:00	COSC 120-001 Lab HS 150	Course Materials Creation		Course Materials Creation	
4:00					

COSC 120-001 // HS 107 | TR 1:00 PM - 2:15 PM | Style 1
COSC 120-001 // Lab // HS 150 | M 2:30 PM - 4:10 PM | Style 1
Class Prep. | MTWRF 8:00 AM - 9:00 AM | Style 2
Course // Materials // Creation | TR 2:30 PM - 5:00 PM | Style 6
Grading | MTRF 12:00 PM - 1:00 PM | Style 5
Have a // good // weekend! | F 1:00 PM - 5:00 PM | Style 10
Lab Prep. | M 1:00 PM - 2:30 PM | Style 2
MATH 140-003 // DH 109 | T 10:00 AM - 10:50 AM | Style 1
MATH 140-003 // DH 112 | MWF 10:00 AM - 10:50 AM | Style 1

Both the options window and the schedule item listing are resizable and collapsible. Just drag the division between the windows to resize and drag to the edge of the application to collapse. The program offers several options for altering the schedule card layout and has 10 user-defined styles for rendering each schedule item. In addition there are facilities for saving and loading both the complete schedule and just the layout option information, copying and saving the schedule image, and printing the schedule image.

Constructing and Editing a Schedule

The schedule card is populated by adding schedule items to the list. Select Edit > Add New Schedule Item to create a new schedule item for the card. You can also use the toolbar button for this or Ctrl+A. When this is selected the following dialog box will appear for you to input a new item.



The dialog box titled "Add New Schedule Item" contains the following fields and controls:

- Style:** A drop-down menu currently set to "1".
- Item Text:** A text area containing "MATH 201-001" and "HS 115".
- Days:** A group of seven checkboxes for days of the week: Monday (checked), Tuesday (checked), Wednesday (checked), Thursday (unchecked), Friday (checked), Saturday (unchecked), and Sunday (unchecked).
- Times:** Two time selection fields. "Start Time" is set to 10:00 and "End Time" is set to 10:50.
- Buttons:** "Cancel" and "OK" buttons at the bottom.

- The style category is a simple drop-down selection of 1-10. This designates the style options that are used for the item.
 - The item text is free form text that will be displayed in the schedule. You may use as many lines as you would like. Note that text is not wrapped inside the schedule item. The fonts are resized so that the given text fits the available space. Hence you do not want the lines to be too long nor do you want a lot of lines for a time slot that is not very long.
 - The days of the week are check boxes for the days this event is happening. The schedule card will display Monday to Friday unless an event is scheduled for Saturday or

Sunday and then these days will be added to the schedule card.

- The start and end times are when the event starts and ends. These are to be input using a 24 hour clock. The display will be using a 12 hour clock.

Once the data is entered and OK has been selected, the new item will be added to the schedule. It will appear in the schedule item list at the bottom and appear in the schedule image. Note that in the schedule list all schedule items are on a single line and the line breaks are given by //. Also, a schedule item that is not within the starting or ending times will either be partially displayed or not displayed at all. The starting or ending times are not altered by the schedule item times.

To edit an item that is already entered you can double-click (or Ctrl+Click) the event in the schedule image. You will note that when you hover over the event it becomes "highlighted" with a cross-hatch pattern. You can also double-click the item in the listing at the bottom, hitting the enter key or selecting to edit from the menu or toolbar, with the item selected will also open the editor dialog. The editor dialog is the same as for adding a new item.

Edit Schedule Item

Style: 5

Item Text

Grading

Days

Monday Tuesday
 Wednesday Thursday
 Friday
 Saturday Sunday

Times

Start Time: 12 : 00
End Time: 13 : 00

In addition to adding and editing items you can clone an item by selecting Edit > Clone Schedule Item from the menu or clicking the clone tool in the toolbar. This will create a copy of the selected item and then you can edit one of the clones with other settings. You can delete a schedule item by selecting it in the schedule item list and either hitting the delete key or selecting Edit > Delete Schedule Item from the menu. You can also remove the entire schedule by selecting Edit > Delete Schedule from the main menu.

Items that overlap in times will show up as red in the schedule item list. These should be edited so that there is no time overlap, or else the image of the schedule may be unpredictable. The program also offers standard undo and redo options to undo unwanted edits. The undo and redo history stores only the schedule items and not the options, these are kept separate by design.

The other input is for the header area. On the left in the options window there is a Header section. Two turn the header on and off simply double click the Include item under Header. You can put in a left, center, and right single line of text. As with the schedule items you will want to keep these short. To add in text to any of these sections double-click the Left Text, Center Text, or Right Text options below the Header title. A small dialog box will appear for you to add or edit the text in those sections. We will discuss the other layout options in a separate section of this help system. Once you are finished entering the items (and adjusting the options to your liking) your screen will look like the following. At this point you are ready to save and/or print the card.

The screenshot shows the 'Schedule Card Creator' application window. The main area displays a weekly schedule for 'Don Spickler' in 'HS 132E' for 'Fall 2022'. The schedule is organized by time slots from 8:00 AM to 4:00 PM. The days of the week are Monday through Friday. The schedule includes various activities such as 'Class Prep.', 'Office Hour', 'MATH 140-003' (with different DH sections), 'MATH 202-002 HS 111', 'Grading', 'Lab Prep.', 'COSC 120-001 HS 107', 'Course Materials Creation', and a 'Have a good weekend!' message on Friday. The interface also features a left-hand 'Option' panel with sections for 'General', 'Days & Times', 'Hour Divisions', 'Printing', 'Header', 'Style 1', and 'Style 2'. At the bottom, there is a list of schedule items with their respective times and styles.

Fall 2022 Don Spickler HS 132E						
Time	Monday	Tuesday	Wednesday	Thursday	Friday	
8:00	Class Prep.	Class Prep.	Class Prep.	Class Prep.	Class Prep.	
9:00	Office Hour	Office Hour	Office Hour	Office Hour	Office Hour	
10:00	MATH 140-003 DH 112	MATH 140-003 DH 109	MATH 140-003 DH 112		MATH 140-003 DH 112	
11:00	MATH 202-002 HS 111	MATH 202-002 HS 111	Office Hour	MATH 202-002 HS 111	MATH 202-002 HS 111	
12:00	Grading	Grading	Research	Grading	Grading	
1:00	Lab Prep.	COSC 120-001 HS 107		COSC 120-001 HS 107	Have a good weekend!	
2:00	COSC 120-001 Lab HS 150	Course Materials Creation		Course Materials Creation		
3:00						
4:00						

COSC 120-001 // HS 107 | TR 1:00 PM - 2:15 PM | Style 1
 COSC 120-001 // Lab // HS 150 | M 2:30 PM - 4:10 PM | Style 1
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 MATH 140-003 // DH 109 | T 10:00 AM - 10:50 AM | Style 1
 MATH 140-003 // DH 112 | MWF 10:00 AM - 10:50 AM | Style 1

Layout Options

The window at the left displays the layout options for the program. At the top are some general layout options and below those are the options for each of the ten styles for the schedule items. To change any of the options simply double-click on the option. In some cases, like fonts and colors, a dialog box will appear allowing you to input your preferences. In other cases the program will either toggle the selection on and off or cycle through the options.

- **General**

- **Time Range:** This sets the starting and ending times of the schedule card. These are not altered by the times of the schedule items and schedule items that are outside this range may be clipped or not show at all.

- **Background Color:** This is the color of the background in the schedule item area. This color is not used in the days and times area or the header area.

- **Outline Color:** This is the color used for the outline of the card as well as the outline for each schedule item and the divisions between the days and times.

- **Font Auto-Resize:** This is the mode used for automatically resizing the fonts. There are three modes: Global, Fixed, and Off. In Global mode the program will automatically select the font size of all the fonts on the schedule to best fit their available space without overlapping into the other schedule items. This is the default mode of the program and really what it was designed to do. The automatic font resizer will start at the minimum font size from the options and increase the font size until the largest font possible still fits in all available spaces. When in Fixed mode the font size that is used is the minimum font size from the options. When the resizing is turned off the program will use the font sizes from each of the font options selected by the user. Note that when printing the Global mode is used no matter what this option is set to. Due to the differences in font metrics of graphical fonts between screen and printer devices the Global setting will produce the most consistent results when printing.

Note that even if an item is off the schedule image, it was given times that were outside the time range, it will still be used in the calculations of the font size when in global resizing mode.

- **Minimum Font Size:** This is the smallest the font size will go in Global mode and is exactly the font size used in Fixed mode. If the text is too large for its available space at this size it will enter other schedule items and either overwrite or be clipped. It is good to keep this value set low but not too low.

- **Resize Adjustment:** This is the point size decrease imposed on the global font size selection. Since the program, in Global mode, will set the font size to the largest possible font it may appear too large for some users. Setting this option will decrease the font size by the given number of points, with a minimum set to the given minimum. This option can stay at 0 (no adjustment, use optimal size) but if you wish to fine-tune the font size you can use this.

- **Days & Times**

- **Background Color:** This is the color of the background in the days and times area.

- **Text Color:** This is the color used for the text of the days and times.

- **Font:** This is the font used for the days and times. Depending on the resize mode being used the font size may be altered.
- **Hour Divisions** The hour divisions are horizontal lines at each hour that go across the schedule item area. This may make it easier for the reader to see when each item starts and ends.
 - **Include:** Turn the divisions on and off.
 - **Color:** The color used for the divisions.
- **Printing**
 - **Dimensions:** This is the width and height in inches of the printed schedule card.
 - **Offset:** This is the horizontal and vertical offset in inches of the upper left corner of the printed schedule card. Since most printers have a printing area less than the are of the page you will want this between 0.5 and 1 inch so that the printer does not clip the image.
 - **Scaling:** There are three scaling modes that can be used: None, Height to Width, and Width to Height. In None mode the printed image has the given dimensions. Since these dimensions may not match the aspect ratio of the image being viewed on the screen the printed image may look a little different. In Height to Width mode the program will set the height of the printed image to match the width and the current aspect ratio of the viewed image. In Width to Height mode the program will set the width of the printed image to match the height and the current aspect ratio of the viewed image. Note that these scaling options could easily set either the width or height to a value that is outside the printer's printing area and hence clip the image. It is advisable to use printing preview or print the image to a PDF file before sending to a physical printer.
- **Heading**
 - **Include:** Turn the header on and off.
 - **Background Color:** This is the color of the background in the header area.
 - **Text Color:** This is the color used for the text of the header.
 - **Font:** This is the font used for the header. Depending on the resize mode being used the font size may be altered.
 - **Left Text:** This is the text placed in the left third of the header.
 - **Center Text:** This is the text placed in the center third of the header.
 - **Right Text:** This is the text placed in the right third of the header.
- **Styles**
 - **Background Color:** This is the color of the background in the schedule item.
 - **Text Color:** This is the color used for the text of the schedule item.
 - **Font:** This is the font used for the schedule item. Depending on the resize mode being used the font size may be altered.
 - **Justification:** This is the horizontal text justification for the text inside the schedule item box. The options here are left, center, and right.
 - **Alignment:** This is the text vertical alignment for the text inside the schedule item box. The options here are top, middle, and bottom.
 - **Spacing:** This turns on and off the spacing between the lines of text. If this is turned on the lines will be equally spaced vertically inside the area, and if turned off the lines will be spaced at the font height of the text.

File and Exporting Options

Once the schedule is created you can save the information to a file, copy or save the image, and of course print or print preview the schedule card. These options are all in the main menu and/or toolbar of the program.

- **Opening a Schedule File:** If a schedule was saved to a file you can open the information back up by selecting File > Open from the main menu or clicking the corresponding tool in the toolbar (or Ctrl+O). At that point an open dialog box will appear and allow you to select a file. Schedule files use a default extension of .pas (Personal Academic Schedule). The program is also set up to load files at startup. So setting this program as the default application for .pas files will allow the user to select the file from a file explorer program on their respective operating system.
- **Saving a Schedule File:** By selecting File > Save or File > Save As from the main menu (or corresponding toolbar tool or Ctrl+S) a save dialog box will appear allowing the selection or input of a filename. If there is a file already loaded then saving will overwrite this file with the new contents.
- **Opening an Options File:** You can also open saved options, without any schedule items, by selecting File > Open Options from the main menu. This will load the saved options (except header text) into the application. Extensions for these files are .pso (Personal Schedule Options).
- **Saving an Options File:** By selecting File > Save Options As from the main menu you will get a save as dialog box to save the current options, except header text.
- **Printing the Schedule:** Selecting File > Print or the corresponding toolbar tool or Ctrl+P will bring up the print dialog box that will allow you to make some printing option selections and finally send the image to the printer. The default orientation for printing is landscape, this can be changed in the dialog options.
- **Print Preview of the Schedule:** Selecting File > Print Preview or the corresponding toolbar tool will bring up the print preview dialog box that will allow you to make some printing option selections and finally send the image to the printer.
- **Saving the Schedule Image:** Select File > Save Image As from the main menu or corresponding toolbar tool and a save as dialog box will appear allowing the user to select an image filename for the image. The default image format is PNG but other formats can be written. The program selects the format based on the file extension used for the filename. The supported formats are BMP, JPG, JPEG, PNG, PPM, XBM, and XPM.