

How to Use PT Tracker v3.1

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PT Tracker Overview

PT Tracker is designed for use by Precision Teaching practitioners. It can track the progress of multiple students, and can track each student's progress in one or more skills. The program tracks and displays timings over a period of up to 105 contiguous days. If more than 105 days are needed for a particular skill, you should start a new skill for the student.

PT Tracker stores the data for a given student in one file. Every time any data is changed for a student, the entire file is automatically saved. The following information is saved in a student file:

- **First Name**
- **Last Name**
- **ID:** The ID field is optional and the user can decide its use and meaning. For example, it could be used to distinguish two students with the same name, or two different files for the same student.
- **Skill(s):** Timings are stored for particular skills that a student is learning. The student file can contain timings for more than one skill.
- **Timing(s):** Each timing is associated with a skill and contains the timing date, duration, count and the number of errors.
- **Default skill:** This is the first skill displayed when you load the data for a student.

The data for a student is stored in a file with this file naming convention:

FirstName_LastName_ID.ptt

For example, the data for student Jane Doe, whose ID is “23”, will be stored in a file named Jane_Doe_23.ptt. The data for student John Doe, who hasn't been assigned an ID, will be stored in a file called John_Doe_.ptt.

PT Tracker User Interface

The following selections are available from the **File** menu:

- **Load student:** Presents a file selection window so that you can choose a student file to load into PT Tracker.
- **New student:** Use this selection to add a new student to the system (this will create a file for the new student).
- **New skill:** Adds a new skill to the currently loaded student.
- **Select skill:** Changes the currently active skill.
- **Rename skill:** Changes the name of the currently active skill.
- **Set default skill:** Allows you to choose a default skill from the current student's skill list. The default skill will get displayed whenever a student's data is loaded into the program. It will also be the pre-selected skill when you choose the *Select skill* option (above).
- **Edit timings:** Displays the *Edit Timings* screen, which displays all the timings for the currently selected skill. Allows you to add timings to the list, including for previous days. Also allows you to delete and modify timings from the list.

On the **main screen** of PT Tracker, you can add timings for the current date and skill. Just fill in these three fields:

- **Duration (min):** The duration of the timing, in minutes. So a half-minute timing would be entered as 0.5.
- **Count:** How many times the student performed the requisite task in the specified duration.
- **NumErrors:** The number of errors made by the student during the timing.

After filling in those fields, add the new timing to the current skill by either pressing the Enter key on the keyboard or clicking the *Add Timing* button on the main screen.

On the semi-log chart, timings are displayed this way:

- **Duration:** Duration is displayed as a horizontal line at 1/Duration. For example, if the duration is five minutes, there will be a horizontal line at 0.2.
- **Count:** Count is converted to count per minute. It will appear as a green-filled circle calculated at Count/Duration. For example, if duration is two minutes and count is 182, there will be a green-filled circle at 91.
- **NumErrors:** NumErrors is converted to errors per minute. It will appear as a yellow-filled rectangle at NumErrors/Duration. For example, if duration is a half minute and there are 2 errors, there will be a yellow rectangle at 4.

If you right-click on the chart, a one-option menu will appear giving you the option to save the chart to a .png file.

The **Edit Timings** screen has three purposes:

- Display all timings for the current skill.
- Add new timings for the current or a prior date.
- Delete or modify timings.

To add a timing on the *Edit Timings* screen, just fill in the four fields (Date, Minutes, Count and NumErrors) and press the Enter key or click the *Add Timing* button.

To delete or modify a timing on the *Edit Timings* screen, double-click on the timing you want to delete or modify. The *Edit or Delete Timing* screen will appear and will display the fields of the selected timing so that you can edit them. There buttons will be available:

- Save Timing: Saves the changes made to the timing.
- Delete Timing: Deletes the timing.
- Cancel: Returns to the *Edit Timings* screen without changing the timing.

Note that a time stamp is associated with every timing. The time stamp is always chosen automatically by the PT Tracker program; it is not possible for the user to choose it. It is always set to the time of day at which the timing was added to PT Tracker, which is not necessarily the time of day at which the timing was performed. If you use the *Edit or Delete Timing* screen to modify the date of a timing, its time stamp will be changed to the time at which the modification was performed.

Note that every timing also has an associated day number (DayNo). The day number is also determined automatically by PT Tracker. Day zero, which is never used, is always the Sunday before the first timing.

The menu items on the **Tools** menu are:

- **Display log:** Displays a list of messages that may help the programmer to diagnose problems with PT Tracker.
- **Reset window size:** Resets the size of the PT Tracker main window to its original size as of when the program started up.

The menu items on the **Settings** menu are:

- **Change database directory:** Use this option to establish a new directory for saving student files. Your selection will be saved to PT Tracker's settings file so that it will be

remembered the next time you start the program.

Database Directory

PT Tracker stores all the student files in a directory you specify, called the database directory. Here are three ways to specify the database directory, in order of precedence (highest precedence to lowest, in case more than one method is used):

- Command line argument (for computer experts): On the command line you can add the full name of the database directory. There are various ways to do this. For example, on a Windows computer, you can specify it in a shortcut that points to the PT Tracker executable file. On a Mac, you would typically make a shell script.
- Settings file: When PT Tracker starts up, it attempts to read its settings file. If no settings file exists, it creates one. The settings file can store the database directory name. You can change the database directory location in the settings file by using the Settings / Change Database Directory menu option of PT Tracker.
- Default (if neither of the other two methods is used):
 - Windows: PT Tracker will look for student files in the “Start in” directory — the current directory at the time PT Tracker is started.
 - Mac: PT Tracker will look for student files in the user’s Documents directory. It is recommended that you change this to something else using the instructions above for the Settings file.

Auto-archive

Every time PT Tracker saves a student file, it also creates an archived version of it. The archived versions are saved in a subdirectory called *archive* in the database directory. Every archived file has the archive date in its name so that the last version saved on any given day will be available on subsequent days. There is currently no automated way to recover archived data, but it can be done manually using the operating system’s file management software.

PT Tracker Installation

PT Tracker is free and works on both PC’s and Macs (and probably Linux too, but it hasn’t been tested there). If you’d like to install it, please contact us at loco4learning@gmail.com and we’ll send you installation instructions.

Google Mode Help

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Google Mode Overview

To support teachers who teach their students from different computers — perhaps one at home and one at work — PT Tracker offers the capability of automatically saving student files to Google Drive whenever they are updated on the local machine. Then, when the teacher needs to access a file saved from a different computer, the student file can be downloaded from Google Drive using a special menu command.

PT Tracker uses a Google Drive access permission that ensures the safety and privacy of all the user's Google Drive files. Before PT Tracker accesses files on Google Drive, Google asks the user if he or she wants to give PT Tracker permission to "View and manage Google Drive files and folders that you have opened or created with this app." By using this permission, Google ensures that PT Tracker will not be able to access files that it didn't create. (With one exception: the user will need to create the "*Google Drive Folder*", described below, for storing PT Tracker files on Google Drive.)

To access Google Drive from PT Tracker, you need to start PT Tracker with the "-g" command line parameter, as described below in the Installation section. This will start PT Tracker in "Google mode", and the Google menu will appear. If you don't start PT Tracker with the "-g" command line parameter, you will not see the Google menu and the program will not access Google Drive.

Google Mode User Interface

Auto-Save of Student Files

Recall that PT Tracker automatically saves a student file to the local computer every time student data is changed. When in Google mode, whenever PT Tracker successfully saves a student file to the local drive, it also automatically uploads a copy of the file to Google Drive. If for some reason, PT Tracker is unable to upload a copy of the file, it will display an error message and put the data in a queue to be uploaded later, if the problem can be fixed. NOTE: The queue is erased when PT Tracker terminates.

Google Account and Permissions

The first time you start up PT Tracker in Google mode, your default web browser will prompt you to:

- Specify a Google account that PT Tracker will use.
- Give PT Tracker permission to “View and manage Google Drive files and folders that you have opened or created with this app.”

After the first use, PT Tracker and Google will typically remember your selections and it usually won’t be necessary to specify them again on subsequent uses of PT Tracker. However, if you wish to change them, there is a menu option for doing so.

Google Drive Folder

On the command line for starting PT Tracker, you specify the Google ID of the Google Drive folder to which student files are written and from which they are downloaded. In this documentation, that folder will be called the *Google Drive Folder*.

Google Menu

In addition to automatic uploads to Google Drive, when in Google mode, the following menu options are available on the Google menu:

- **Download student file:** This menu selection will display a list of all the student files in the *Google Drive Folder*. You will have the option of downloading one of those student files. If there is a file by the same name in the currently active directory of the local computer, the downloaded file will replace it. After the file is downloaded to the local computer, the downloaded student data will be displayed.
- **Upload student file:** This will display all the student files in the currently selected local directory. You will have the option of uploading one of those files to the *Google Drive Folder*. As with automatic uploads, if an error occurs while uploading the file, an error message will be displayed and the data will be placed in a queue for later uploading if the problem can be fixed.
- **Return to Google sign-in screen:** This will allow you to re-specify the Google account you want PT Tracker to use. Google will also ask you again whether you want to give PT Tracker permission to save and read Google Drive files (as described above in the section “Google Account and Permissions”).
- **Cancel attempt to sign-in to Google:** Usually, when PT Tracker accesses Google Drive, the operations are relatively quick. However, the sign-in process depends on user input, and so it can take a long time, or the user can make a mistake and cause PT Tracker to wait forever for a user response. When this happens, you can use the “Cancel attempt to sign-in to Google” menu option to terminate the sign-in process.
- **Change Google Drive folder:** Normally, the *Google Drive Folder* only needs to be specified on the command line. But if you do need to change it while running the

program, you can use this menu item. See the instructions in the Installation section of this page to find out the Google ID of the folder you want to specify.

- **Disable/Enable Google interface:** You can use this menu item to disable Google functions. When the Google interface is disabled:
 - You won't be able to use other Google menu items until you re-enable the Google interface.
 - Any time PT Tracker automatically saves a file to the local computer, it will add the data to the queue for later uploading to Google.

Google Status

In Google mode, the status of the Google interface is always displayed in the lower right-hand corner of PT Tracker. The status consists of a filled in circle whose color indicates the current status. Possibilities include:

- **Green:** PT Tracker successfully connected to Google. Student file uploads (both automatic and requested) and downloads should succeed.
- **Yellow:** Google sign-in is in progress. You will need to make selections in the Google authorization request in your default browser.
- **Orange:** A Google Drive operation (other than sign-in) is in progress. These operations usually finish fairly quickly unless there is an internet glitch. These operations include:
 - Uploading a student file
 - Downloading a student file
 - Verifying that the *Google Drive Folder* is valid for saving files. This operation is performed automatically at start-up, after signing in again, and whenever a new *Google Drive Folder* ID is specified (via the “Change Google Drive folder” menu item).
- **Red:** PT Tracker did not successfully connect to Google. No file uploads or downloads can be performed. Auto-saves to Google Drive will be queued. You will need to use the “Return to Google sign-in screen” menu item to make the status turn green.
- **Gray:** Google interface disabled. Auto-saves to Google Drive will be queued. You will need to re-enable the interface via the “Enable Google interface” menu item in order to resume uploading and downloading student files.

Save Queue

In Google mode, if for some reason PT Tracker is unable to upload a student file to Google Drive when required, a copy of the file is added to an internal “save queue” so that it can be uploaded as soon as possible. PT Tracker attempts to upload the data in the save queue whenever any Google Drive operation is successfully completed. Principally, this means that the queued student data will be uploaded after a successful sign-in.

Whenever there are items in the save queue, a yellow button will be displayed in the lower right-hand corner of PT Tracker. This ugly button serves as a warning that data has not been uploaded. If you click on the button, a list of the queued student files will be displayed. When this list is displayed, if PT Tracker believes that it might be possible to successfully upload the files, it will also offer an option to attempt an upload of the queued data.

The save queue is lost when PT Tracker terminates, so any student files that are in the queue when PT Tracker terminates will not get uploaded to Google Drive.

Google Mode Configuration

To enable Google Drive functionality in PT Tracker, perform the following steps:

- Create a Google Drive folder to hold the PT Tracker files.
- Obtain the Google Drive file ID of the folder. You can do this as follows:
 - Sign in to Google Drive.
 - Find the folder you created for PT Tracker files.
 - Right-click on the folder name to display a Google menu.
 - Select the Get Link menu item.
 - Google will display a link that looks something like this:
 - `https://drive.google.com/drive/folders/1DQ3zj9axvaof5w1ZAeMLzym5XRLxkGaC?usp=sharing`
 - The file ID is everything between the last forward slash and the question mark.
 - In this example, it would be: `1DQ3zj9axvaof5w1ZAeMLzym5XRLxkGaC`
 - Copy the file ID of the folder (but not all the other stuff in the link).
- Start PT Tracker with the `-g` command line option.
 - After `-g`, put the Google file ID of the folder. For example:
 - `PT Tracker -g 1DQ3zj9axvaof5w1ZAeMLzym5XRLxkGaC`
- Note that PT Tracker also supports the possibility of specifying on the command line a local directory for PT Tracker files.
 - The local directory can be placed either before the `-g` option or after the Google file ID. For example:
 - `PT Tracker ./tracker -g 1DQ3zj9axvaof5w1ZAeMLzym5XRLxkGaC`

Note the following regarding PT Tracker's use of Google Drive:

- PT Tracker can only access two types of Google Drive files
 - Those created by PT Tracker.
 - The *Google Drive Folder* (whose ID you specify on the command line or via the “Change Google Drive folder” menu item).

- PT Tracker can only read or overwrite files created while signed in to Google with the same account that created those files. PT Tracker won't even be able to see the files created via another Google account, even if they are in the same directory.
- PT Tracker can access a shared Google Drive folder if the specified Google account has Editor privileges on the folder. However, again, if different Google accounts are used to put files into a shared folder, PT Tracker will only be able to see/read the files created under the same account that wrote them.

These limitations were incorporated into PT Tracker as a security measure. A user of PT Tracker can be confident that the program will not be able to read or write any files but its own. This restriction is enforced by Google, not by PT Tracker.