

Parse Heart Rate 2016 Manual

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1 DISCLAIMER

Parse Heart Rate Beta is a tool for owners of the Fitbit heart monitoring devices (Charge HR, Surge, Blaze, etc.) to export their heart rate data. The program can also parse the .TCX files exported by Garmin and Polar applications [See Section 12]. This Beta version is provided free with no warrantee of fitness for any task. By using this program, you agree to hold Maple Hill Software harmless for any and all inaccuracies or other problems that may occur as a result of your use of the program. You agree not to base any medical decisions on the output the program produces. Fitbit, Garmin, and Polar are a trademarks of their respective corporations. Parse Heart Rate is in no way connected with or supported by any of them.

2 LICENSE

You are granted a non-exclusive, non-transferable license to use the program on any computer you use. You may not redistribute or reverse engineer the software.

3 PREREQUISITES

1. You must be running the Windows operating system. Parse Heart Rate will not work on a Mac or Linux system.
2. Your Fitbit Dashboard and/or API Explorer must display information in English. If your regional language is not English, you must change it, e.g., USA or UK or another region that uses English.
 - a. On the Dashboard screen, scroll to the bottom of the PC Dashboard, and by your Country, Click Change.
 - b. In your phone app, go to Account/Settings/Select Country.
 - c. Your phone may override your PC Dashboard, so you may need to change it in both.
3. To use the new API Browser, you must first register for a Client ID on the Fitbit site to give permission for the program to access your data. It's easy; see Section 10.

4 INSTALLATION

1. Prepare installation files.
 - a. Save or download the distribution file to a temporary folder.
 - b. If you received ParseHeartRateVxxx.zip.txt, you must rename it to remove the “.txt” extension.
 - c. Right click the zip file and click Extract All.
 - i. If this is a first installation, pick a version neutral folder name you can use again for the next update, e.g. ParseHeartRate2016
 - ii. If this is an update, unpack the installation zip to the same location used previously.
2. After extracting the files, the folder should open; otherwise, open that folder.
3. Double Click “Setup” to install the program.

NOTE: If you did NOT unzip the installation to the same folder used previously, setup will fail. In this case, uninstall the previous version first. Your data will not be affected at all.

You can uninstall the program using the Control Panel/Programs and Features option. If you want to, you can also delete the root data folder, default is C:\fitbit. This will also delete all your data!!

5 USAGE OVERVIEW

Parse Heart Rate 2016 is windows program that extracts heart rate data stored on the Fitbit servers or contained in a TCX file. First your heart data is retrieved and saved as a text file. Second the raw data is parsed and turned into tab delimited CSV text files and/or Excel files.

You retrieve the data from Fitbit in one of four ways:

1. From your Fitbit Dashboard Activity web page.
2. From the API Explorer web page provided by Fitbit through a third party
3. From the ParseHeartRate API Browser.
4. Unattended Mode: From the API Browser.

With options 1 or 2, after the data you want is displayed, you must manually save the web page as a text format file.

With options 3 and 4, the data is retrieved and saved to a text file automatically in a single step.

Options 3 and 4 are the preferred methods for retrieving Fitbit data.

You can also parse a TCX file you saved with the Garmin or Polar application.

There are three program windows, plus you use the Fitbit Dashboard and API Explorer web sites:

1. The Main Window Parser controls parsing the text or TCX data file you have retrieved with one of the four Fitbit options or created from the Garmin or Polar site as described above. “Parsing” means reading and extracting the data before writing it out again in a usable CSV or Excel format.

2. The API Wizard is used to generate queries to retrieve your data for the date and time periods you specify using either the API Browser or the API Explorer.
3. The API Browser uses the query you generated with the API Wizard to retrieve your data directly from the Fitbit servers and automatically save it as a text file to be parsed into CSV and/or Excel files.
4. The Fitbit Dashboard Activity Details web page shows a heart rate graph from which you can extract the data by first saving the web page as a text file.
5. The API Explorer is a third party web program Fitbit provides that lets you run queries on ANY of your data on the Fitbit servers, not just heart data. You use the API Wizard to help you generate heart rate queries.

In all cases, using the Main Window Parser, ParseHeartRate parses the raw text or TCX file of your data and exports it to a tab delimited text file and/or a native Excel file. Exports may create a single file per input file and/or a single Collection file containing data from many input files.

There may be times when you want to use any one of the four input methods, but you will probably settle on the new API Browser. So, which method should I use?

1. Get your data by saving an Activity page if you have already defined an exercise activity and want your data for that. And you can use the Activity method if it meets your needs and you don't want to use the API Wizard. However, it is much more laborious to define a 24-hour activity in your dashboard to retrieve your data from it, than to use the new API Browser.
2. Use the API Wizard with the API Explorer if you want to tinker with your query or try other queries. It is more involved than saving an Activity page. Nevertheless, the API Explorer can provide the most detailed data available for a single period of 24 hours, making it superior to the Activity page method.
3. Use the API Wizard with the new API Browser for the easiest and most full-featured access. It provides the same data as the API Explorer, but it gets it directly and it immediately saves the text file for you. You can also retrieve multiple days with one request very quickly. However, it does require more one-time setup and registering on the Fitbit site to give the program permission to retrieve your data.
4. Unattended Mode is a new fourth option that links the Parser, API Wizard, and API Browser with an autopilot that automatically retrieves your heart rate data from Fitbit, creates your input text files and output CSV and/or Excel files, and exits the program. You can use the Windows Task Scheduler to create a recurring task that will launch Parse Heart Rate.
5. If you have a Garmin or Polar device, your only choice is to export your activity as a TCX file and use the new TCX parsing functionality.

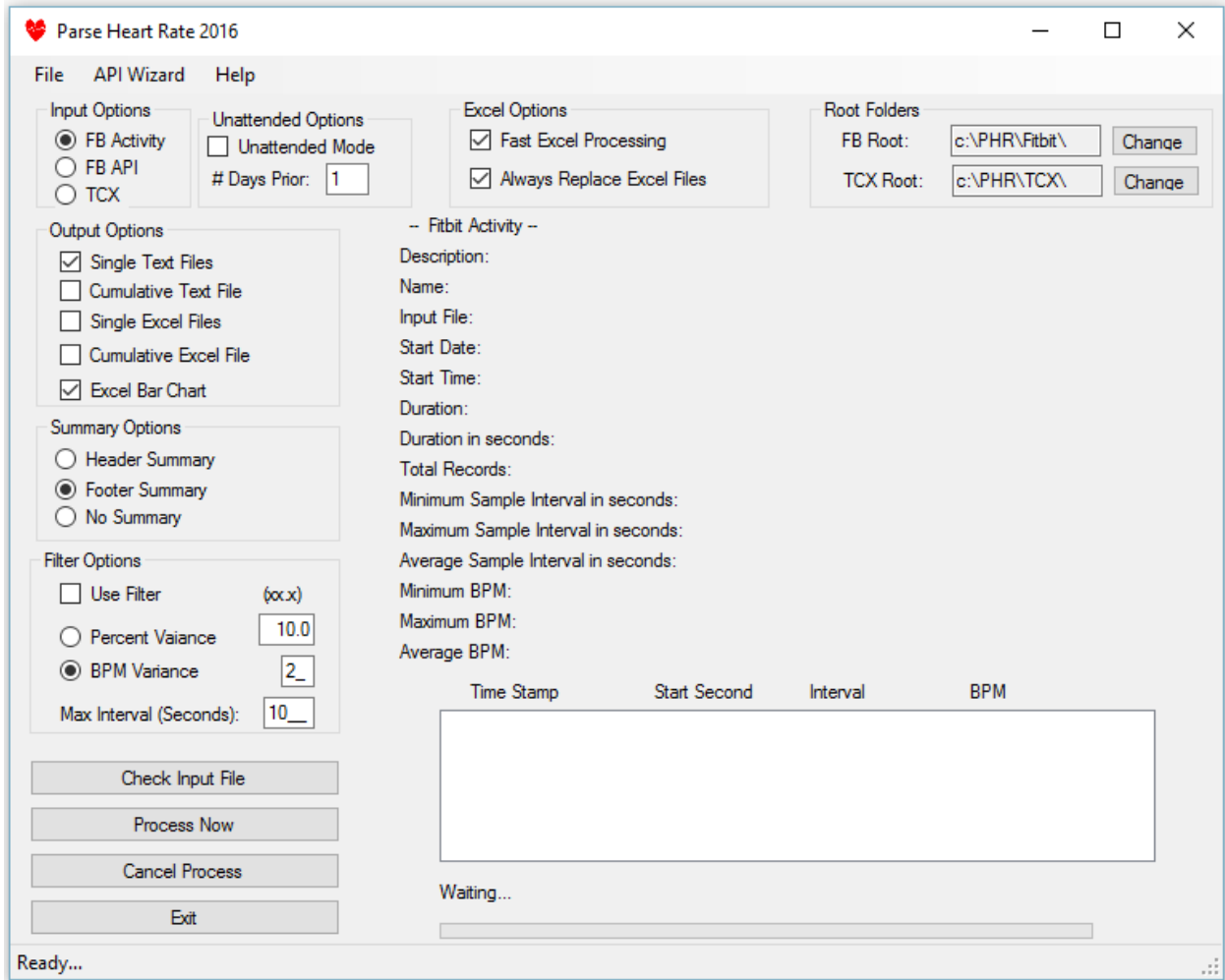
Instructions for each method are different so they are divided up into separate sections below. You can skip to the appropriate section for your intended usage.

6 USING PARSE HEART RATE WITH THE DASHBOARD ACTIVITY SCREEN

6.1 STEP BY STEP

1. Log into your Fitbit Dashboard.
2. Create a new activity. Name it "Track Heart Rate" or a name of your choosing.
3. Select a date and time period. For the easiest 24-hour heart rate tracking:
 - a. Select the date
 - b. Set the start time to 12:00 AM
 - c. Set the duration to 23:59:59
 - d. Set Calories to 1 (required field)
4. Click Log to create the activity.
5. Click View Details on the new activity.
6. In Internet Explorer, Click File Save As.
 - a. In the Save As Type drop down box, select "Text File (*.txt)"
 - b. Insert the date in front of the default filename, for example "yyyy-mm-dd Track Heart Rate.txt"
 - i. If you save multiple shorter periods for the day, add a sequence, "yyyy-mm-dd-## filename.txt",
 - ii. so your collection export will read the inbox files in the correct order.
7. Navigate to the PHR\Fitbit\inbox folder or type "C:\PHR\Fitbit\inbox" in the address bar.
8. Click Save.

9. Run ParseHeartRate.exe by clicking the “Maple Hill Software/Parse Heart Rate” Start menu option.



- a. Make sure the Input Option is set to “Activity”
 - b. Select your preferred Output Options
 - c. Select your preferred location for the summary information.
 - d. Optional: you can turn on a filter and set your beat variance and maximum time interval. For an Activity with a maximum of 600 data points you will probably leave it off. Using the API Wizard methods you can retrieve over 30,000 data points in a 24 hour period. The filter allows you to reduce that data to show only changes in heart rate with a minimum baseline interval set in seconds. Satisfying the interval means to output the data point even if the variance rule is not satisfied. You can set your heart rate variance as either a simple BPM variance or as a percent of change between the last output BPM and the next BPM.
 - e. Optional: Click “Check Input File”. The first file in the inbox will be displayed. If the input option does not match the file type you will receive an error message.
 - f. Click “Process Now”.
10. Parse Heart Rate will:
 - a. Create Heart Rate Data tab-delimited “.txt” and/or Excel “.xlsx” files in the Export folder.
 - b. Move the source files from inbox to history folders.

- c. If one of the Cumulative options is selected, it will create a single file containing all the data in all the files in the inbox folder.
11. Parse Heart Rate will not export any Heart Rate Zones data.
12. You will note that creating Excel files now takes only a little longer than tab delimited text files—IF you use the Fast Excel option that uses the Windows clipboard. You can turn that feature off if it fails on your system.
13. Parse Heart Rate creates “.xlsx” Excel files. You will need Excel 2007 or later to open them.

6.2 HOW THE FITBIT DASHBOARD DISPLAYS HEART RATE DATA IN AN ACTIVITY GRAPH

If you open the txt file you saved of the Activity web page, you will discover that it contains summary information as well as a data set of up to 600 intervals of Heart Rate BPM. See the next section for a detailed discussion. The dashboard uses these pairs of data to generate the graph and display the BPM when you fly your mouse over it.

6.3 INFORMATION YOU NEED TO MAKE THE BEST USE OF PARSE HEART RATE WITH ACTIVITY GRAPH

1. Parse Heart Rate reads the text file you create with the browser Save_As option while displaying an Activity Graph. It searches for the section that defines your Heart Rate Activity, extracts the Summary Information, and then the data structure used to create the graph.
2. The detail heart rate data contained in the Dashboard web page consists of up to 600 pairs of data:
 - a. The Duration in milliseconds since the beginning of the activity. This data is given the field name "StartSecond" in the PHR export file.
 - b. The heart rate in Beats Per Minute for the period beginning at the Duration time.
3. The GRANUALITY of the available data varies with the length of the Activity.
 - a. Maximum granularity of data is limited to 600 periods per Activity.
 - b. The granularity of the source data periods appears to be approximately 10 seconds per period.
 - c. An Activity with a length of approximately 1 hour and 40 minutes will yield a maximum granularity data export, with an average number of seconds per period of approximately 10 seconds.
 - d. As the Activity exported grows in length, the granularity of the data set is reduced and the number of seconds per period increases.
 - e. If you create an Activity that results in less than 600 total seconds you can be assured that you have extracted all available data exposed by the graph from the Fitbit database. The Fitbit database itself most likely contains much more data than ever exposed by the graph. This is the major limitation of Parse Heart Rate, since it does not access the source data.
 - f. Conversely, if the number of Heart Rate Records exceeds 600, and the average number of seconds per period exceeds 10, you are sacrificing some detail for convenience.
 - g. If you want a 24-hour record, it is not practical to create over 12 Activities for the day and display and save each page to a text file. However, if you want to examine a short period with the most detail, you are free to do so.

- h. Here is an example of Summary Information for an Activity 100 minutes (1 hour 40 min) long:

Activity Start Date: 12/5/2015
Activity Duration: 01:40:00
Activity Duration in seconds: 6000
Total Records: 566
Minimum Sample Interval in seconds: 5
Maximum Sample Interval in seconds: 265
Average Sample Interval in seconds: 10.60
Average BPM: 75

- i. For a 24-hour activity, your Average Sample Interval (or period) may be over 2 minutes and your Maximum Sample Interval may be determined by the time in the day when you removed your Fitbit to charge it while taking your morning shower or doing other wet activities.

Note that the Fitbit Dashboard limits the length of an Activity to 24 hours. But you are free to configure your activity to run from 6pm to 6pm or some other time span rather than midnight to midnight. Here is an example Summary Information for such an Activity:

Track Heart Rate at Thursday, December 10, 2015, at 6:00PM for 23:59:59 minutes
Input File: C:\Fitbit\Inbox\2015-12-10 6-6pm Track Heart Rate.txt
Activity Name: Track Heart Rate
Activity Start Date: 12/10/2015
Activity Start Time: 6:00:00 PM
Activity Duration: 23:59:59
Activity Duration in seconds: 86399
Total Records: 600
Minimum Sample Interval in seconds: 1
Maximum Sample Interval in seconds: 3936
Average Sample Interval in seconds: 144.00
Average BPM: 68

4. After parsing out the data available in the Dashboard web page, Parse Heart Rate then creates two calculated fields:
- The Timestamp for the beginning of each heart rate period.
 - The number of seconds contained in each period or interval. This field is given the name "Seconds" in the export files.

The program also converts the duration or "StartSecond" field from milliseconds to seconds.

5. Finally, Parse Heart Rate creates your exported data files in either tab delimited or Excel formats.
- Based on command line switches you can select the type of data file you want.
6. For either Text tab delimited (which can be imported into Excel), or native Excel formats, you can select individual files, one per source file, or a cumulative data file that includes all the data from each source file in your inbox.

7. Individual data files can have the Summary Information included as a header or a footer or omitted entirely. The default is to include it as a footer, which facilitates importing the tab delimited file into Excel with the first line containing the field names.
 - a. If you create native Excel files, you may wish to use the Header Summary option to put the summary at the top of the workbook sheet.
 - b. Collected format files do not contain any Summary Information.
 - c. All export files contain mandatory program and copyright information.
 - d. Here is a sample of several lines from a Text Export file. The Timestamp is in 12-hour format:

```

Timestamp StartSecond Seconds BPM
12/12/2015 12:00:00 AM 0 96 62
12/12/2015 12:01:36 AM 96 90 63
12/12/2015 12:03:06 AM 186 97 62
...
12/12/2015 11:58:26 PM 86306 93 66
12/12/2015 11:59:59 PM 86399 0 63

```

- e. Here is a sample of several lines from an Excel Export file. The Timestamp is in 24-hour format:

```

Timestamp StartSecond Seconds BPM
12/12/2015 00:00:00 0 96 62
12/12/2015 00:01:36 96 90 63
...
12/12/2015 23:58:26 86306 93 66
12/12/2015 23:59:59 86399 0 63

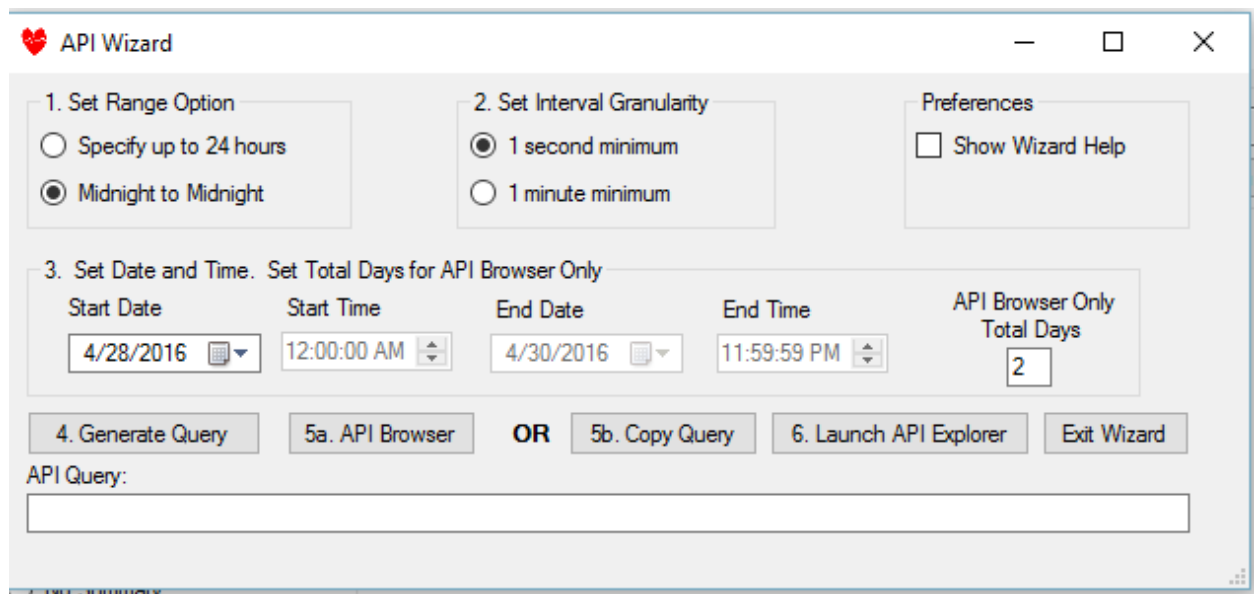
```

8. Graphing your data with Excel Chart option.
 - a. The Excel Chart option automatically creates a bar chart of your heart rate when it creates the Excel page. The chart is based on the repetition of a block character, ASCII 219.
9. Graphing your data with in Excel.
 - a. Instructions on using Excel's graphing functions are beyond the scope of this document.
 - b. For a single activity export, you may want to graph the StartSecond against BPM.
 - c. For a Collected export, if you want to make a graph that crosses activities, you will need to graph the Timestamp against BPM, because the StartSecond resets to zero at the beginning of each collected Activity.

7 USING THE PARSE HEART RATE API WIZARD

7.1 STEP BY STEP

1. Recommended: Log into your Fitbit Dashboard.
2. Run ParseHeartRate.exe by clicking the “Maple Hill Software/Parse Heart Rate” Start menu option. The main window opens (See Section 6):
3. Click the menu option “API Wizard”. The following screen opens:



- a. Set Range Option
 - i. “Specify up to 24 hours” lets you use the start and end dates and times to determine the period exactly up to 23:59:59 hours.
 - ii. “Midnight to Midnight” uses only the Start Date and provides 24 hours of data.
- b. Set Interval Granularity
 - i. “1 second minimum” gives the most detailed data. NOTE: You will NOT get a data point every second. Average interval with this setting is approximately 10 seconds.
 - ii. “1 minute minimum” will give you a data point every minute if the Fitbit was recording. This is useful to reduce the number of data points approximately five-fold, which in turn will speed up the parsing process, especially for Excel output.
- c. Preferences.
 - i. “Show Wizard Help” will make the screen under “h” appear, as well as one when you press “Copy Query”. Uncheck this option after you learn how it works.
- d. Your settings and preferences are saved when you exit the program.
- e. Set Date and Time. Based on your Range Option, set the Start Date or all date time settings. Maximum time span is 23 hours, 59 minutes, 59 seconds. If you will use the API Browser you can generate a query which will be run for multiple days. Set the Start Date to the first day; Total Days includes the first day. So 4/28 and 2 Total makes 4/28 and 4/29.

- f. **Generate Query.** Click this button to produce the query string for the API Browser or API Explorer. PSR checks that your timespan is less than 24 hours. You will see the query statement appear in the text box if your settings meet the criteria.

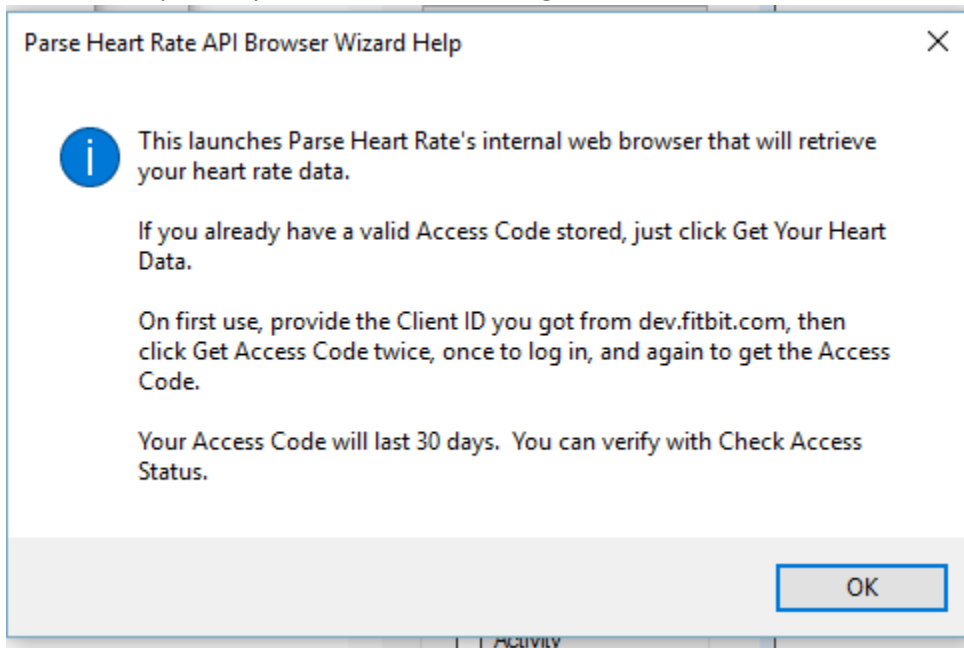
7.2 CHOOSE YOUR API METHOD

If you want to use the API Browser (recommended) continue on to Section 8A.

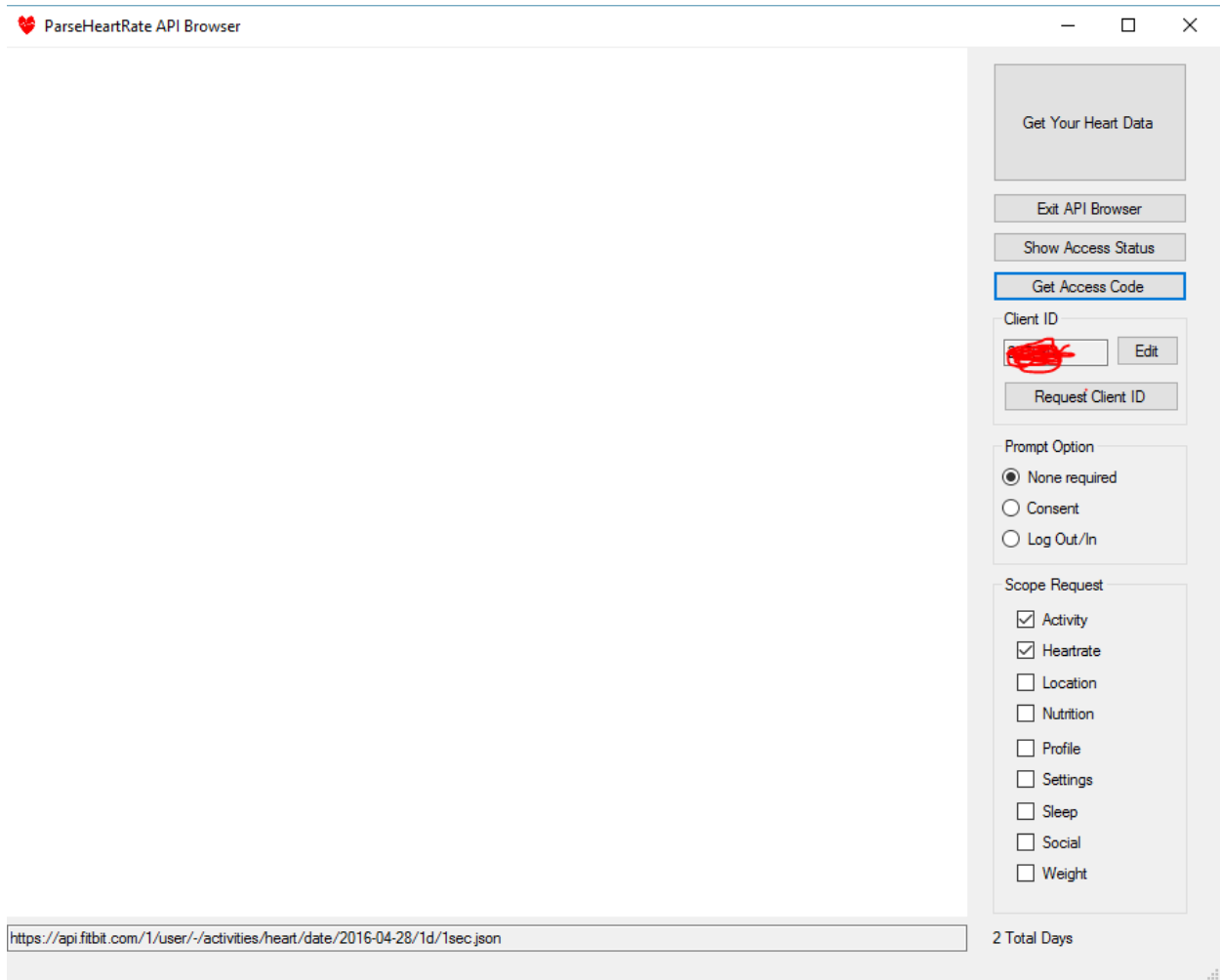
If you want to use the API Explorer, skip to section 8b.

8A. USING PARSE HEART RATE WITH THE API BROWSER

1. Before you can use the API Browser you must register on the Fitbit site and get your Client ID. Follow the steps in Section 10: SETTING UP THE PARSEHEARTRATE API BROWSER FOR FIRST USE to get your Client ID first.
2. Click Step 5A. API Browser
3. If Wizard Help is on, you will see the following screen:

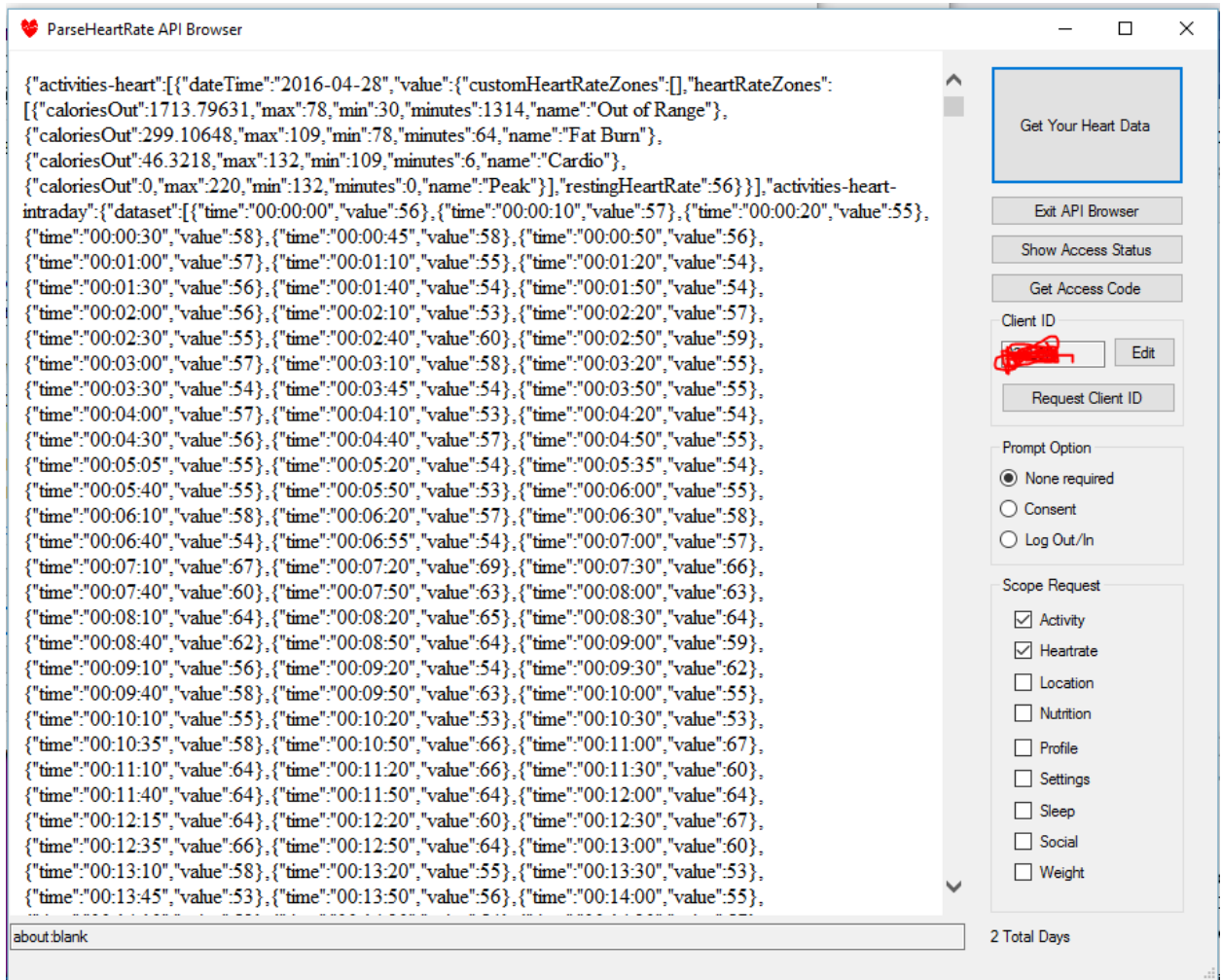


You will want to turn off the help eventually. Click OK and the browser screen opens:



4. Make sure your Client ID is shown (I have scratched mine out above.)
5. If you want you can click Show Access Status, but not needed.
6. You will see the first query is shown along with the Total Days to the right. The program will automatically increment the date to provide the Total Days of data shown.

- Click the Get Your Heart Data Button. The browser should show your data like this:



You can scroll down and view it, but it is not in a friendly format. We need to parse it still.

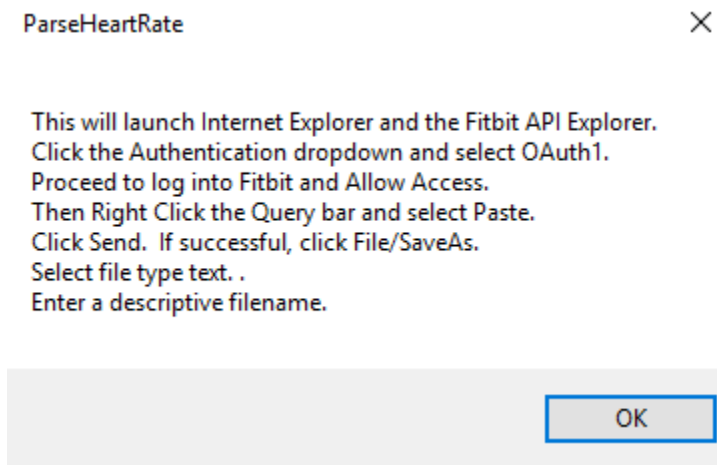
- Go back to the main Parse Heart Rate 2016 window by Exiting the Browser and then Exiting the Wizard. In the Main Window:
 - Make sure the Input Option is set to "API"
 - Select your preferred Output Options
 - Select your preferred location for the summary information.
 - Optional: you can turn on a filter and set your beat variance and maximum time interval. Using the API methods you can retrieve over 10,000 data points in a 24 hour period. The filter allows you to reduce that data to show only changes in heart rate with a minimum baseline interval set in seconds. Satisfying the interval means to output the data point even if the variance rule is not satisfied. You can set your heart rate variance as either a simple BPM variance or as a percent of change between the last output BPM and the next BPM.
 - Optional: Click "Check Input File". The first file in the inbox will be displayed. If the input option does not match the file type you will receive an error message.
 - Click "Process Now".
- ParseHeartRate will:
 - Create HeartRateData tab delimited .txt and/or Excel .xlsx files in the Export folder.

- b. Move the source files from inbox to history folders.
 - c. If one of the Cumulative options is selected, it will create a single file containing all the data in all the files in the inbox folder.
10. Parse Heart Rate will not export any other data.
 11. You will note that creating Excel files now takes only a little longer than tab delimited text files—IF you use the Fast Excel option that uses the Windows clipboard. You can turn that feature off if it fails on your system.
 12. Parse Heart Rate creates .xlsx Excel files. You will need Excel 2007 or later to open them.
 13. There is one significant difference between an Activity export and an API export. In the Activity export the StartSecond field is an integer representing the number of seconds since the beginning of the activity. In the API export the StartSecond is represented as hh:mm:ss being the time since the beginning of the dataset.

8B. USING PARSE HEART RATE WITH THE API EXPLORER

These instructions continue from Step 7G.

- a. Copy Query. Click this button to put your Query in the windows clipboard.
- b. Click Launch API Explorer. If “Show Wizard Help” is on under Preferences, you will get this instruction screen:



- i. Click the Authentication dropdown box and select OAuth1. You will see a “Request Fitbit Permissions” window. Click “Sign in with Fitbit”
- ii. You will then go to a Fitbit window. If you are not already logged in to Fitbit, you will see an ID and Password prompt and an “Allow” button. Key in your ID and Password. If you are already logged in, you will just see an Allow button. In both cases, click Allow access.

- iii. After you successfully Allow access, you will see “fitbit-AuthenticatedUser” in the Authentication drop down box. Now the API explorer has access to your data.
 - iv. In the “Request URL” area, make sure the method is set to “GET”. Then Right Click in the text box and select Paste to insert your generated query into the API Explorer. (You can also click in the box and press CTRL V or Shift Insert).
 - v. Click the Send button.
 - vi. After a brief “Working” message flashes up, you should see a green “OK” message at the top of the response pane, and your data below. You can scroll down to take a look.
 - vii. In the Internet Explorer Menu Bar, Click File Save As. (If the menu bar is not turned on, right click the title bar of Internet Explorer and select Menu Bar.)
 - viii. In the “Save As Type” drop down box, select "Text File (*.txt)"
 - ix. Insert the date in front of a descriptive filename, for example "yyyy-mm-dd API Track Heart Rate.txt"
 - x. If you save multiple shorter periods for the day, add a sequence, "yyyy-mm-dd-## filename.txt", so your collection export will read the inbox files in the correct order.
 - xi. In the Save As dialog, navigate to the Fitbit\inbox folder or type "C:\Fitbit\inbox" in the address bar.
 - xii. Click Save.
14. Go back to the main Parse Heart Rate 2016 window.
- a. Make sure the Input Option is set to “API”
 - b. Select your preferred Output Options
 - c. Select your preferred location for the summary information.
 - d. Optional: you can turn on a filter and set your beat variance and maximum time interval. Using the API methods you can retrieve over 10,000 data points in a 24 hour period. The filter allows you to reduce that data to show only changes in heart rate with a minimum baseline interval set in seconds. Satisfying the interval means to output the data point even if the variance rule is not satisfied. You can set your heart rate variance as either a simple BPM variance or as a percent of change between the last output BPM and the next BPM.
 - e. Optional: Click “Check Input File”. The first file in the inbox will be displayed. If the input option does not match the file type you will receive an error message.
 - f. Click “Process Now”.
15. ParseHeartRate will:
- a. Create HeartRateData tab delimited .txt and/or Excel .xlsx files in the Export folder.
 - b. Move the source files from inbox to history folders.
 - c. If one of the Cumulative options is selected, it will create a single file containing all the data in all the files in the inbox folder.
16. Parse Heart Rate will not export any other data.
17. You will note that creating Excel files now takes only a little longer than tab delimited text files—IF you use the Fast Excel option that uses the Windows clipboard. You can turn that feature off if it fails on your system.
18. Parse Heart Rate creates .xlsx Excel files. You will need Excel 2007 or later to open them.
19. There is one significant difference between an Activity export and an API export. In the Activity export the StartSecond field is an integer representing the number of second since the beginning of

the activity. In the API export the StartSecond is represented as hh:mm:ss being the time since the beginning of the dataset.

9. MORE ABOUT THE API EXPLORER (ADVANCED)

You can get more information about the API Explorer from the Fitbit documentation available online. Here is information about accessing the API Explorer manually.

1. See the link in the Quick Start section at <https://dev.fitbit.com/docs/> that points to the API Explorer under Number 2. Click the link. https://apigee.com/me3/embed/console/fitbit?apig_cc=1 (Internet Explorer should be your default browser; or open IE and paste the URL above into the address bar.)

2. When the API Explorer opens, click the authentication drop down box and select OAuth 1. This will open up a login page where you log in to your fitbit account. If you are already logged in you can just click Allow. After you successfully log in, you will see fitbit-AuthenticatedUser in the Authentication drop down box. Now the API explorer has access to your data.

3. Also in the second paragraph of the Quick Start, click the link labeled "OAuth Authentication" to open the full API manual at <https://dev.fitbit.com/docs/oauth2/> Click the Heart Rate section on the left side. Then scroll past the first section to the part on Intraday data. There you will find the documentation on how to query the database. And a sample API call:

```
GET https://api.fitbit.com/1/user/-/activities/heart/date/today/1d/1sec/time/00:00/00:01.json
```

You can read the docs, but the hyphen after user means the current logged in user, the word "today" automatically requests today's data, but you can put in a date, "2016-01-10", for example. "1d" means the range of data to be returned, i.e., 1 day. 1sec means the most detailed data; 1min would return 1 data point per minute. You will discover that there isn't actually a data point every second, and really, how could there be? If your heart rate is below 60 bpm there would be seconds with no beat. Time is the beginning time, i.e., midnight in the example. The final parameter is the length of time you are asking for, 1 minute in this case.

SO..... In the API explorer make sure the Request URL drop down is set to GET and past the example call into the address bar where it says select API method. Click send, and voila you have a minute of heart rate data beginning at midnight (assuming you wear your Fitbit at night). The data will look something like this:

```
"activities-heart-intraday": { "dataset": [
{ "time": "00:00:00", "value": 58 },
{ "time": "00:00:03", "value": 58 },
{ "time": "00:00:06", "value": 58 },
{ "time": "00:00:09", "value": 58 },
{ "time": "00:00:10", "value": 57 },
```



```
{ "time": "00:00:13", "value": 57 },  
{ "time": "00:00:16", "value": 57 },  
{ "time": "00:00:19", "value": 57 },  
{ "time": "00:00:20", "value": 56 },
```

So you can play around: change 1sec to 1min, change the duration, date, start time etc.

The Parse Heart Rate API Wizard, simply assists you with creating the query string, copying it to the clipboard, and opening the API Explorer in Internet Explorer so you can save out the text file for export by Parse Heart Rate.

10. SETTING UP THE PARSEHEARTRATE API BROWSER FOR FIRST USE

The new preferred method of retrieving your data is through the ParseHeartRate API Browser, which is literally a mini-web browser that requests your data from Fitbit servers. Using the API Browser, you can retrieve all the data formerly only available in PHR through the third party API Explorer. In addition, the new PHR Unattended Mode uses the new Browser to automatically retrieve your data on whatever schedule you set up in the Windows Task Scheduler. Once you authenticate with the Browser, your access code is good for 30 days.

In order to use the Browser, you must first “Register An App” on the Fitbit site. This registration will give you an all-important Client ID, which you will copy and paste into ParseHeartRate’s Browser Client ID field. Once you have registered your application, you won’t have to do it again. With your Client ID, you get the access code that is good for 30 days. And after 30 days, you can quickly refresh it.

1. Registering an Application to Access Your Data

- a. You will need to visit the Fitbit developer site and login to register a new app. Click “Request Client ID” in the ParseHeartRate API Browser. This will open Internet Explorer and send you to dev.fitbit.com.
- b. Unless you are already logged in to your Fitbit dashboard, you will get a message that you must log in, and the opportunity to do so.
- c. If you aren’t on the Register an Application page, click that tab.
- d. Fill out the form like the example below. The most critical pieces are the oAuth2.0 Application Type, which must be “Personal”; and the Callback

URL, which must be <https://localhost/>. You can put whatever you want in the other fields.

- e. Check off that you agree to the terms and click Register.

dev.fitbit.com

OVERVIEW REGISTER AN APP MANAGE MY APPS

Register an application

Please review the following errors:

- Description must be at least 10 characters long

Application Name * * Required

My Data

Description *

Get my data

Application Website *

https://localhost/ ?

Organization *

https://localhost/

Organization Website *

https://localhost/

OAuth 1.0 Application Type (Deprecated) *

Notice: OAuth 1.0a is deprecated and will be removed in April 2016. New applications should use OAuth 2.0. Existing applications should upgrade.

Desktop Browser ?

OAuth 2.0 Application Type *

Server Client Personal ?

Callback URL *

https://localhost/ ?

Default Access Type *

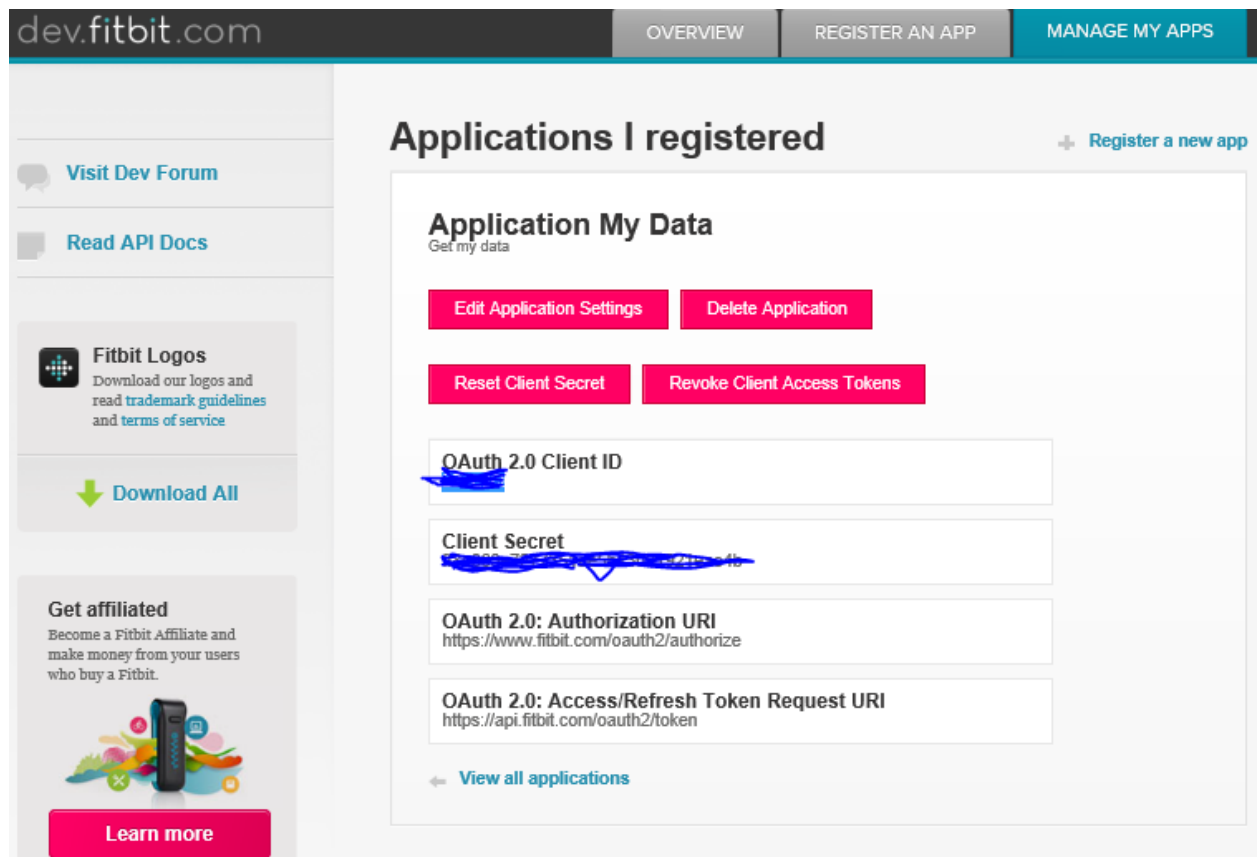
Read & Write Read-Only ?

+ Add a subscriber

I have read and agree to the [terms of service](#)

Register Cancel

- f. After you click Register, your app will be registered and you will receive your Client ID necessary to use the ParseHeartRate Browser. You will see a screen like this:



- g. Highlight the Client ID, right click it, and click Copy. You should also write it down for reference.

2. Saving your Client ID in ParseHeartRate.

- Launch ParseHeartRate in normal mode. (If you are in Unattended mode, click Cancel immediately after the program loads, and turn off unattended mode. Then exit and reload the program.)
- From the menu, click API Wizard.
- In the Wizard,
 - Click "5a. API Browser". (You will get a warning if you have not generated a query. Just click OK to continue on to the Browser.)
- In the ParseHeartRate API Browser, note the blank Client ID Field.
 - Click Edit, next to the Client ID field.

- ii. Paste in the Client ID you copied to the clipboard earlier at the end of step 1. Or type it in.
 - iii. Click Save
3. Getting your first access code.
- a. Just for fun, first click the “Show Access Status” button. Note that there is no access code stored, nor expiration date.
 - b. Click Get Access Code. Assuming you are still logged in from earlier, you will get a screen like this:

♥ ParseHeartRate API Browser



My Data by <https://localhost/> would like the ability to access the following data in your Fitbit account for 30 days

heart rate

Deny

Allow

Data shared with My Data will be governed by <https://localhost/>'s privacy policy and terms of service. You can revoke this consent at any time in your Fitbit [account settings](#). More information about these permissions can be found [here](#).



Signed in as vendors@mhsoft.com
[Not you?](#)

- c. Click Allow. If all went well, the PHR Browser will display:

♥ ParseHeartRate API Browser

Security authorization refreshed. Click Show Status to see details.

- d. Click Show Status, and you will see that an access code has been issued and will last 30 days.

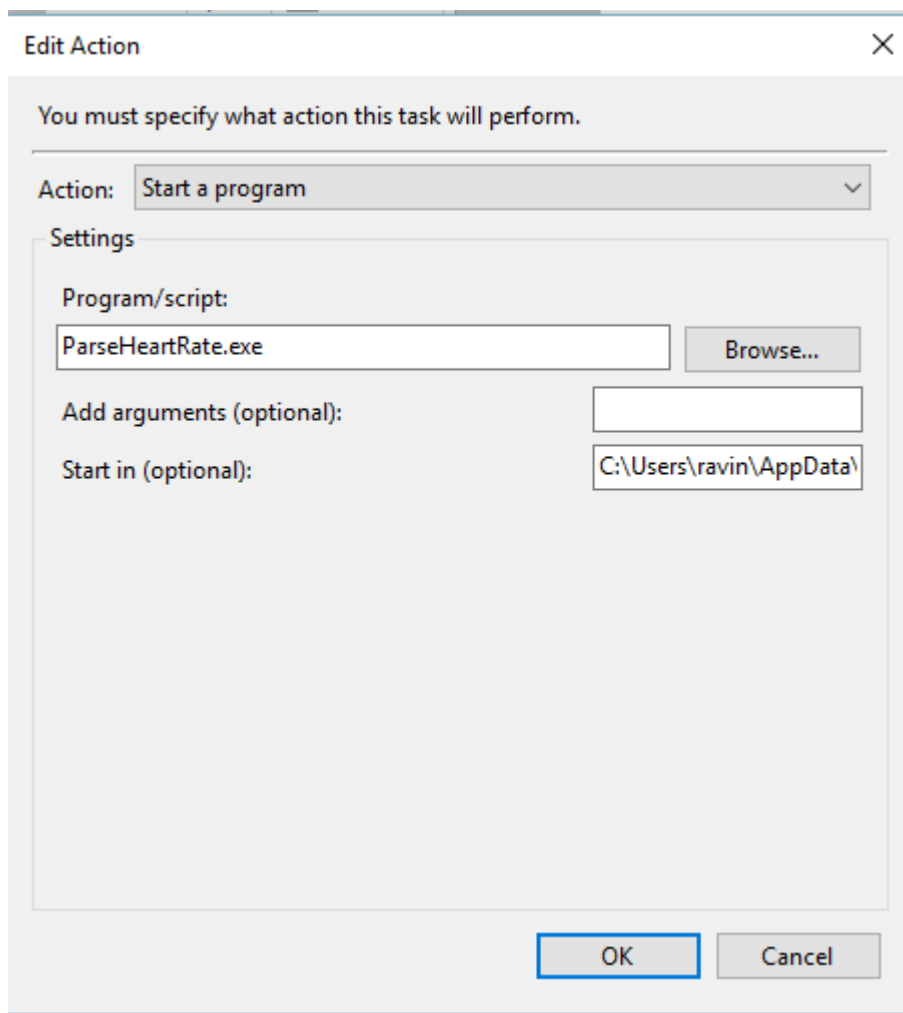
11. UNATTENDED MODE: LOGIN SESSION REQUIRED

Unattended Mode links the Parser, API Wizard, and API Browser with an autopilot that automatically retrieves your heart rate data from Fitbit, creates your input text files and output CSV and/or Excel files, and exits the program. You can use the Windows Task Scheduler to create a recurring task that will launch Parse Heart Rate.

You control unattended mode by selecting the checkbox in the main window and selecting the number of prior days you want. When you exit the program the setting is saved. The next time the program is launched it will run automatically. You must click Cancel to exit the unattended mode.

For Unattended Mode to be useful you must schedule the program to run automatically using the Windows Task Scheduler. Complete task scheduler instructions are beyond this scope, however there are several things you need to know.

1. You need to set your task to run only when the user is logged in. Otherwise, the Excel export will fail.
2. You will need to configure the Action the task will run to be Start a Program like this:



THIS IS THE TRICK!! Just where IS ParseHeartRate.exe? Because it is a click once application, it is stored in a folder under your user folder, and it is not easy to locate. So, in ParseHeartRate

3. Click the button "Show and Log Application Folder". You will note that the path appears in the status line, but you cannot copy it from there, and it is painful to write down.
4. From the main menu, click Help/Today's Log.
5. Highlight the application path in the last line of the log file and copy it to the clipboard.
6. In the Task Scheduler, Edit Action screen, click paste in the Start In field to insert the application path you got from the log. That allows the task scheduler to find the program.
7. NOTE: You will need to edit your task and repeat these steps whenever you install a program update, because the installed folder name will change.
8. Of course you need to create a schedule in task scheduler. If you schedule your job to run daily, you can set the prior days to ONE in ParseHeartRate. If you set your task to run weekly, you should set prior days to 7 in ParseHeartRate.
9. By setting ParseHeartRate for Unattended Mode and your desired prior days, and exiting the program your settings are saved. Then the task scheduler should now automatically retrieve and save your heart rate data because it will launch ParseHeartRate in Unattended Mode.
10. NOTE: You must be logged into your computer for unattended mode to create Excel files. You can lock your session, but you must remain logged in. It is possible that text files could be exported without an active login session, but I have not tested that. Step 1 mentioned that your task must be set to run only when the user is logged in. Otherwise the Excel files will not be created.

12. PARSING A TCX FILE CONTAINING HEART RATE DATA

TCX stands for Training Center XML. XML stands for Extensible Markup Language. Excel understands XML, and a TCX file is just a specialized XML file, so you can import a TCX file into Excel. Garmin and Polar allow you to export TCX files containing heart rate data recorded during an activity you manually started on your device. So why would you want to use ParseHeartRate?

1. It's a little work to have Excel import the TCX file.
2. The result isn't pleasing as you get a column for every field, like Activity start time, and that Column extends down through every BPM row, making the spreadsheet very wide.
3. The TCX file contains a timestamp and a BPM. ParseHeartRate calculates the interval and starting second for the BPM datapoint.
4. ParseHeartRate includes a summary section and a bar chart.
5. ParseHeartRate can also produce .CSV file for importing into other programs.

HOW TO USE THE TCX FUNCTION

1. In your Garmin or Polar application, select an Activity and use the programs Export function to create a TCX file. In Garmin Connect Dashboard, click a saved activity, click the Gear in the upper right, and select Export to TCX. In Polar Flow, double click an Activity on the Diary calendar page, and click the Export Session button.

2. In both cases save the TCX file into the TCX\inbox folder. If you are using the default root folders, it will be at C:\PHR\TCX\Inbox.
3. In the main ParseHeartRate screen, Select the Input option TCX.
4. Optionally click Check Input File to make sure it is seen by the program.
5. Click Process now.
6. Your .csv or .xlsx files are saved to the TCX\Export folder.
7. Note: you cannot use unattended mode to parse TCX files since there is no way to generate and save them automatically.

13. COMMAND LINE OPTIONS (ADVANCED)

Command Line Options are still supported by the program, but are superseded by the Windows interface which contains radio buttons and check boxes as well as a text box to store an alternate root path. These settings are all saved and recalled automatically by the program, making a command line switch unnecessary to preset the program options.

Furthermore, Parse Heart Rate is now a “Click Once Application” and installation puts all the program files in a very unintuitive location. For example:

```
C:\Users\ravin\AppData\Local\Apps\2.0\J2TH7KG4.6JZ\DQKM43RY.VBP\pars..tion_40d57d28dc6b2a0e_0000.0001_3da02af69f7fda53
```

See the instructions in the previous section on how to locate your current installation folder. There you will find one with ParseHeartRate.exe and the .bat files below. You might be tempted to copy the files to the C:\PHR\fitbit folder for convenience and use the .bat files, but that would not work. You would need to add a CD [program folder] to the beginning of the .bat file. Alternatively, you could create shortcuts to the bat files. In either case the solution would not survive an update since ClickOnce will put the new version in a new folder. So why bother. The information below is provided for completeness only.

Command Line Options:

/Root[path] where [path] is the processing root folder.

Example /Root:c:\phr\fitbit (default folder if no command switch is used).

Note: there is no command line option for the TCX root.

/Header = Put summary info before heart rate data, but not in collections.

/Footer = (default) Put summary info after heart rate data, but not in collections.

/NoSummary = Omit all summary info.

/NoText = Omit text file export.

/NoChart = Omit Excel bar charts.

/Excel = Create an Excel for each inbox file.

/CollectText = Create a combined text export of heart rate data in all files in the inbox.

/CollectExcel = Create a combined Excel export of heart rate data in all files in the inbox.

/h Or help = This Information.

Batch files to automate command switches:

PHR-AllFiles.bat

```
ParseHeartRate.exe /CollectText /Excel /CollectExcel
```

PHR-AllExcel.bat

```
ParseHeartRate.exe /NoText /Excel /CollectExcel
```

PHR-AllText.bat

```
ParseHeartRate.exe /CollectText
```

PHR-AllSingle.bat

```
ParseHeartRate.exe /Excel
```

PHR-AllCollected.bat

```
ParseHeartRate.exe /CollectText /CollectExcel
```

PHR-CustomRoot.bat

```
ParseHeartRate.exe /Root"c:\My Root With Spaces Use Quotes"
```

Note: If you want spaces in your custom root folder you must enclose the path in quotation marks.