Manual on the experimental version of OptiKey

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Introduction

This is a manual for the experimental version of OptiKey developed by the Danish research project GazeIT. This project aims to be an easy solution for a person who wants to conduct gaze typing experiments using OptiKey.

This project is developed on top of OptiKey's code base, and is essentially a modified version of OptiKey with an added option to manipulate settings for the experiment before doing the experiment with OptiKey. While conducting gaze typing experiments the program will log gaze data together with program data from OptiKey (such as which keys are being looked at in real time) into CSV files for later analysis.

This manual will explain how to get the experimental version of OptiKey downloaded and running (Section 1.1) (recommended if you don't have experience with Git and Visual Studio), or alternatively, one can clone the repository, build the project, and run it through Visual Studio (Section 1.2) (recommended if you do have experience with Git and Visual Studio).
This manual will also give a tour of the program to show it's features (Section 2). Lastly it will go through and explain the output files (Section 3).

Prerequisites

This experimental version of OptiKey will only work on computers and tablets running the Windows operating system (Windows Vista SP2, 7, 8, 8.1 and Windows 10).

The computer or tablet should be decent, however high performance equipment is not required.

As of November 9, 2017, the Gaze data logging feature only works with the EyeTribe developer kit. More Gaze trackers are to be added in the future.

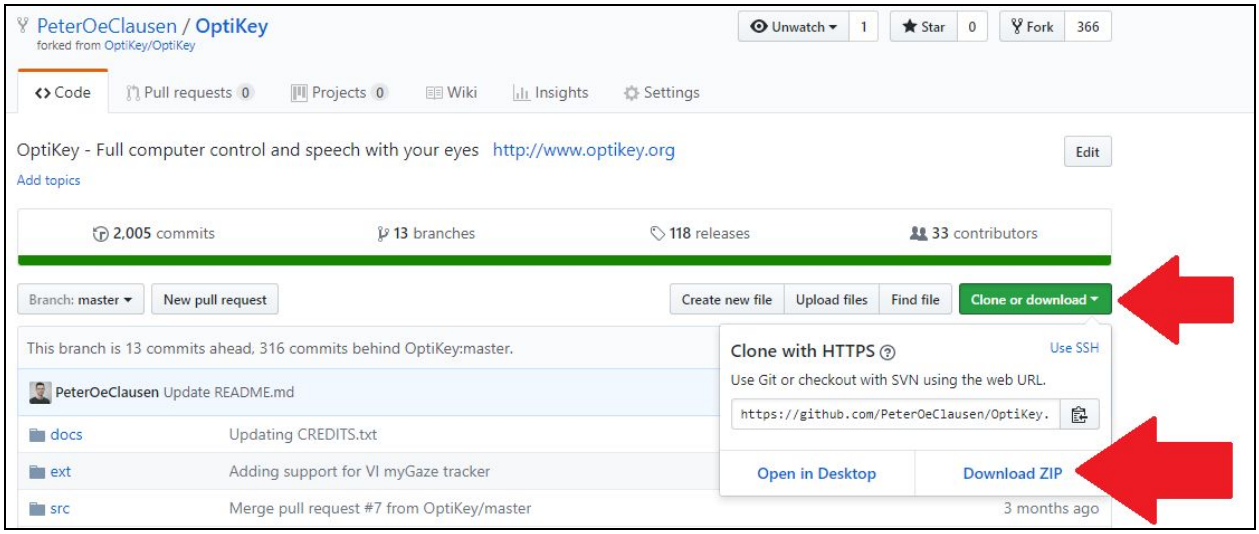
1.1: How to get the program as a zip and run it

In this section we will explain how you can download the program as a zip file with Windows 10 (Note that a similar process can be done with previous versions of Windows). Note also that by doing it this way, you have to get a new version manually if a new one comes out. We recommend doing this if you are not familiar with Visual Studio and Git. However if you are

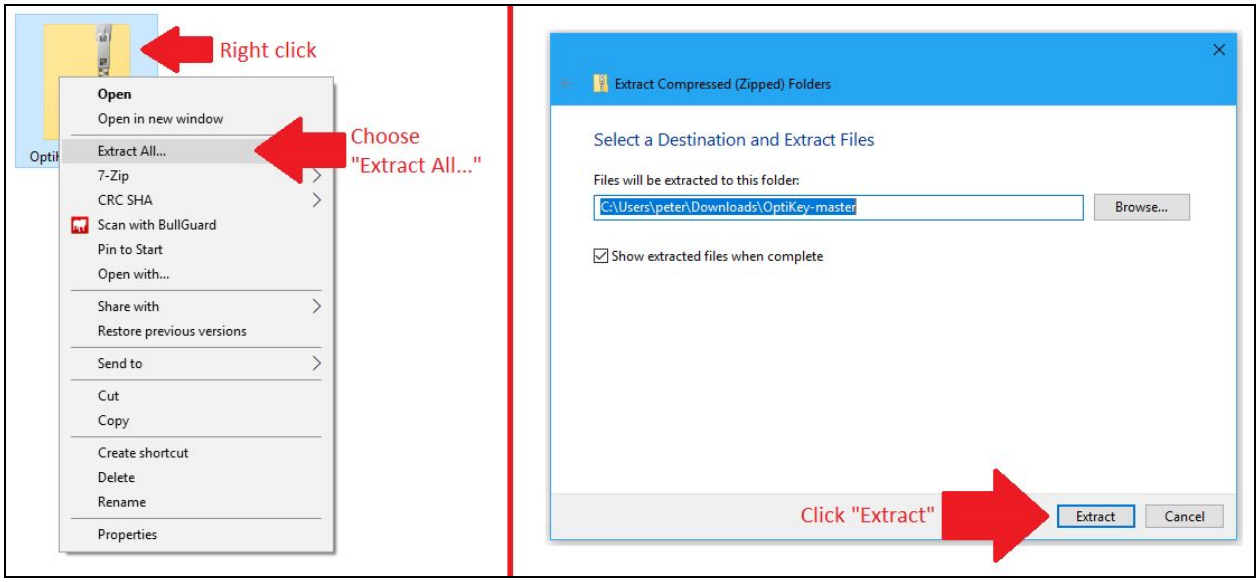
familiar with Visual Studio and Git, you should consider doing section 1.2 instead, since you more easily can update the program to the newest version.

Let's get started:

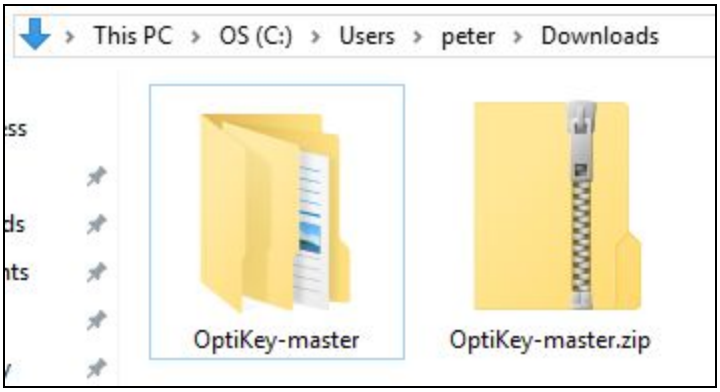
1) Go to the github page for the project: https://github.com/PeterOeClausen/OptiKey
2) Click on the green "Clone or download" button, and then click "Download ZIP" as shown in the image below:



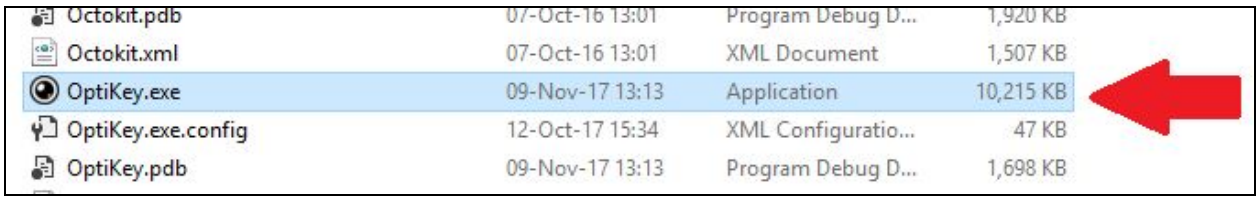
3) Go to the location on your computer where you just downloaded the Zip file to, and unzip it by right-clicking the file and pressing "Extract all..." and then "Extract" as shown in the image below:



4) You should now have an unzipped folder right next to ".zip" file we downloaded, or the location you specified in the extraction program:



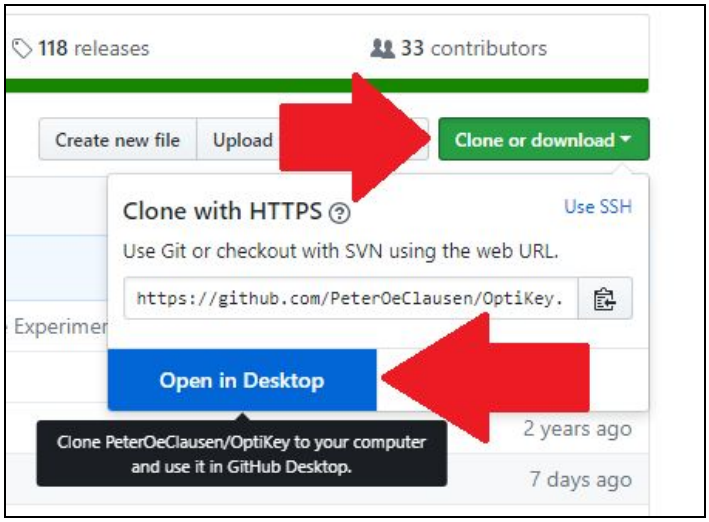
5) Optinal: You can now delete “OptiKey-master.zip” file, we won't be using it any longer.
6) Open the “OptiKey-master” folder, inside it, there should be another “OptiKey-master” folder, open that as well. You are now in the root directory of the project. Note: If you have Visual Studio installed, you can open the “OptiKey.sln” file, and get access to all the code, and run it with Visual Studio. If you do not have Visual Studio installed, do the following step.
7) Inside this folder there should be a zip file called “Build-” followed by some numbers. These numbers indicates the year, month and date the program was generated from code files. Example: “Build-20171109” would be a program generated the 9th of November, 2017. A never version may have bug fixes or more features than older versions. Unzip this by right-clicking and selecting “Extract All...”, and then “Extract” as we did before. Inside the folder generated, you can start the program by double clicking “OptiKey.exe”:



You can now proceed to section 2 to read through a tour of the program.

1.2: How to get the code through git and run it with Visual Studio

1) Clone the repository found here: https://github.com/PeterOeClausen/OptiKey
    a) This can either be done with a command shell like CMD or Bash. If you have Git installed, navigate to the folder with “cd your/folder/name/here” where you want to put the project and write:
    “git clone https://github.com/PeterOeClausen/OptiKey”.
    b) Alternatively, if one has the Github for Windows desktop program installed, one can click “Open in Desktop” on the project’s Github page, to clone the project:

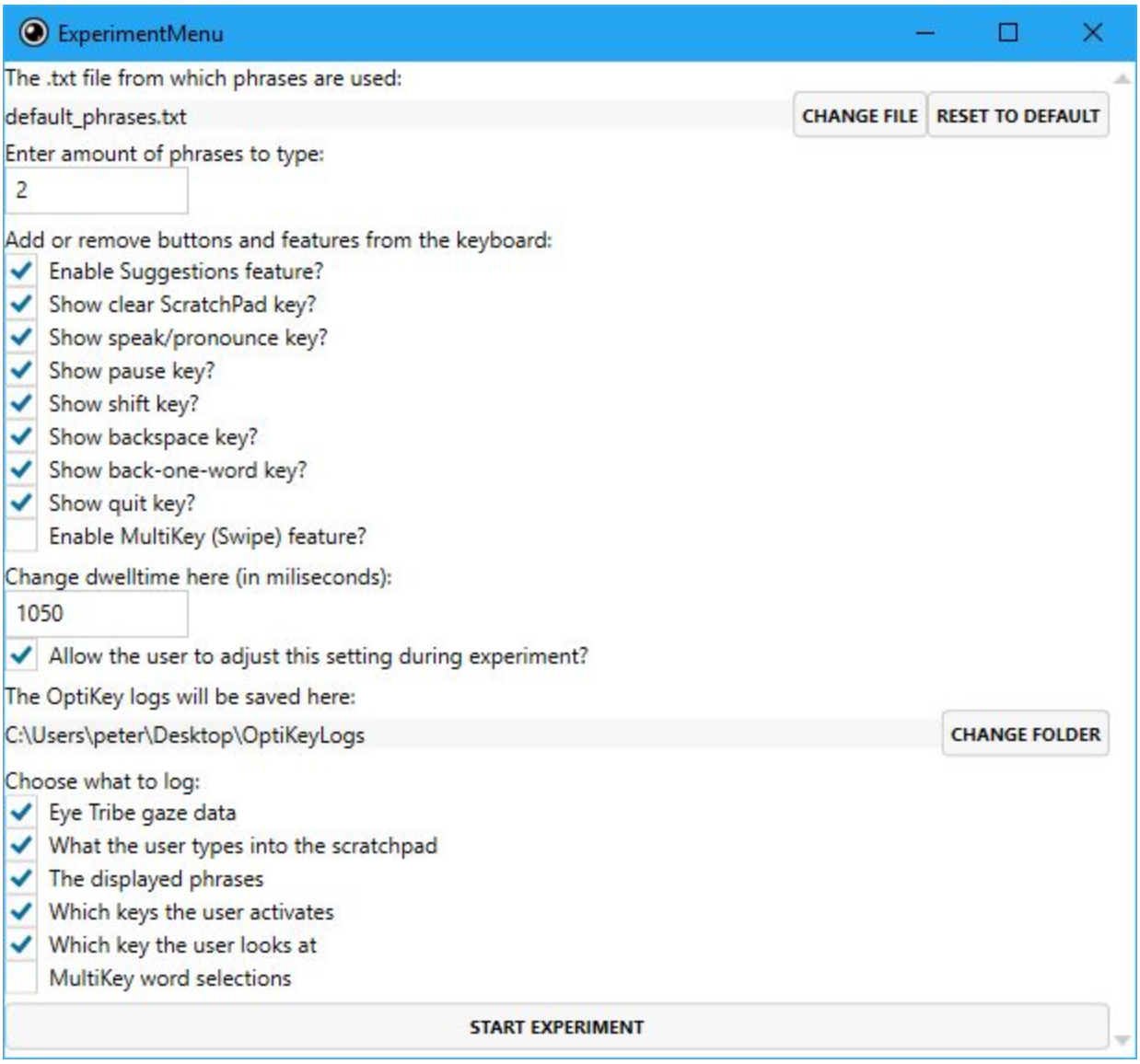


2) Open the OptiKey.sln file in Visual Studio.
3) Press “run”.
4) You can update the program from a command shell like CMD or Bash by writing “git pull”. Or alternatively one can do it from the Github for Windows desktop program.

2: Tour of the program

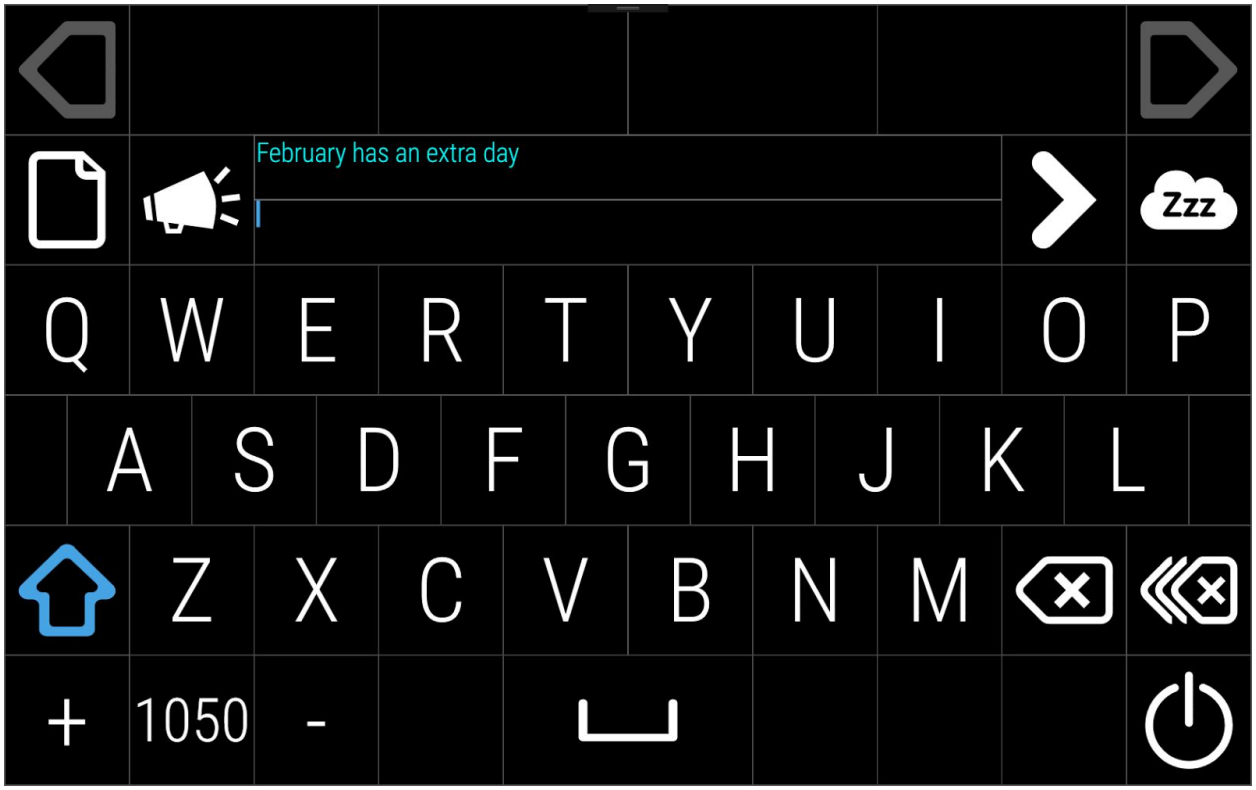
The program consists of two windows, the “Experiment Menu window” which can be seen below and the “keyboard” window which can be seen below the Experiment Menu window.

The Experiment Menu is the first window you will see when you startup the program. From here, you can set the settings from your experiment:



Note that the program saves your settings, so that you can easily run multiple experiments with the same parameters.
When you are done setting the settings, click the button in the bottom that says “START EXPERIMENT”.

The program will then start the experiment with the keyboard based on your settings:



You can now conduct the experiment, while the program logs your activity.
You can take a look at what the output files contains in the next section.

3: Produced output