User Manual of TEXpen

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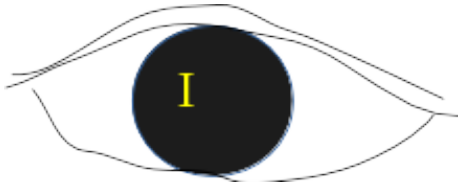
I have a dream, where the computer helps me think, but I twinkle the sparks in my eyes.



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1 Introduction

TEXpen is an editor started when Dr. Wang was preparing for his manuscript in his days as a PhD student. Later on, it was improved so that his PhD dissertation can be written with it, including 100,000 Chinese characters with all kinds of equations, figures and tables.

TEXpen aims at lessening the burden of scientific writers in preparing articles, slides and books, and it is still in perhaps endless development and improvement. However, just like any of the majority of those open source projects, TEXpen is provided free of charge, free of guarantee, free of promise, and free of restriction, but full of tiny bugs, full of thirsty for donations, and full of desires for feedbacks.

TEXpen is an editor, or hopefully, an integrated development environment (IDE) for writing Latex based articles and slides. It allows users to finish all works of writing with this single tool, and calls TEX/LATEXfunctionalities automatically whenever necessary.

2 Environment & Installation

TEXpen is an editor, and users can use it to edit any text file, including plain text files, c plus plus source files, and HTML source files among others. However, it would be happier if users use it for LATEXediting. So, it's better to have a TEX/LATEX environment, although TEXpen is able to work functionally without it.

Users can either compile the source code to get the executable, or directly use the executable for your operating system (OS). We will go through the compilation procedure, but please feel free to skip them if an executable is available. We use Windows OS as an example for illustration, while operations in other OS will be added later.

2.1 Compilation

Since TEXpen is developed under Qt, the compilation of TEXpen requires Microsoft Visual Studio (VS) and Qt. VS provides the C/C++ compilier for Qt, while Qt generates the execuble. Users may skip this sub-section if an execuble is alreay available.

2.1.1 Installation of Visual Studio

VS 2017 (Community Edition) or later version will be installed first. To save disk space, users may install only C++ related components, including VC++ and Windows SDK,

as shown in figure 1.

Figure 1: The required components of Visual Studio

2.1.2 Installation of Qt

Qt 5.5 or later version is recommended. While installing Qt, it's important to select the right compilier, or the source codes of TEXpen fail to compile. Qt has built-in compiliers like MinGW, but we need MSVC to compile the component WebEngine that is used by TEXpen. As a result, both MSVC and WebEngine should be checked while selecting compunents during installation, as shown in figures 2 and 3.

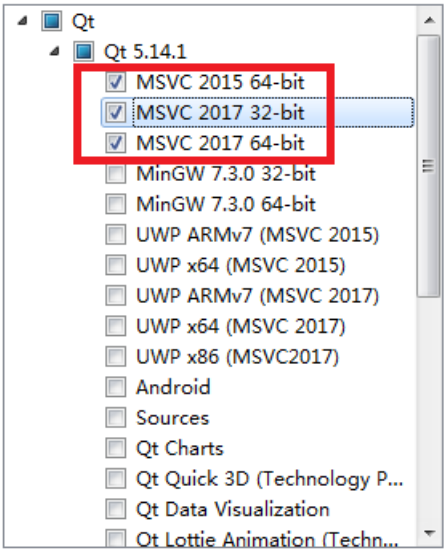

Figure 2: The required compiler for Qt

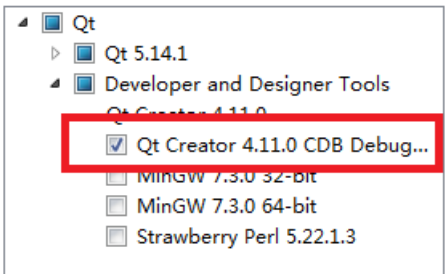

Figure 3: The required components of Qt

2.1.3 Compilation

Now it's time to compile the source codes of TEXpen. Locate the file 'texpen.pro' in 'src' folder, open it with Qt Creator, and simply build the project. The executable of TEXpen will be generated if there is no error. If errors happen, please check the installation procedures carefully as introduced in the sub-section.

2.2 The Latex Environment

To write a Latex based article or slide using TEXpen, the Latex software Texlive 2018 or later version is recommended for installation. After that, TEXpen is ready to use.

To check the completion of installation, locate the source code 'docs/manual.tex' of this manual, open it with TEXpen, and try to compile it. If a pdf file exactly the same as what you are reading now is generated, TEXpen is working properly.

2.3 Common Errors

Solutions for some common errors are listed in this section.

2.3.1 Cannot Compile the Source Code

If the following error: "Unknown module(s) in QT: webenginewidgets" is shown while compiling the soure code of TEXpen, the module 'Webengine' is not properly installed. Please refer to sub-section 2.1.2 for details.

2.3.2 Cannot Compile a '*.tex' File

Sometimes a '*.tex' file cannot be properly compiled by TEXpen. The compilation may run into a dead loop. Even if the compilation finishes, the pdf file may not be generated or updated. When these error happen, it's important to check the contents in '*.tex' file to see if there exist errors in the context of Latex. For example, the package 'graphicx' is required if figures are used.

3 Using TEXpen

The usage and functionalities of TEXpen is introduced in this section.

3.1 The Graphical User Interface

The graphical user interface (GUI) of TEXpen is shown in figure 4. The left-side of the window shows the list of sections/sub-sections of the article or slide. Menus and toolbar lie on the top, like many other applications. The statusbar stay on the bottom, showing the status of current operation. The rest of the window is occupied by text editing area, with the number of each line shown on the left side.

Figure 4: The GUI of TEXpen

3.2 The Major Functionalities

All funcationalities can be accessed through the menus and shortcuts on top of the main window.

3.2.1 File Operations

The 'File' menu enables users to create a new '*.tex' file with an optional template, open an existing file, save the file being edited, print files, and show the list of files opened recently. There are quite a few shortcuts which help users to access files conveniently.

3.2.2 Edit Operations

The 'Edit' menu enables users to modify the text of the '*.tex' file with operations like undo, redo, cut, copy, paste, search etc., like what most file editers do. TEXpen also offers operations specilized for Latex, for examples, inserting a table, a graphic or date/time. There are quite a few shortcuts which help users to edit files conveniently.

3.2.3 Format

The 'Format' menu enables users to modify the font of the text.

3.2.4 View

The 'View' menu enables users to adjust the appearance of the window. For examples, toolbar, outline and statusbar may be shown in the windows or hidden, according to users' needs. Color scheme of the text editing area may also be changed.

3.2.5 Tool

The 'View' menu probably provides the most important operations: Build, View PDF and Config. The 'Build' operation compiles the '*.tex' file being edited and generates the corresponding PDF file, which may be previewed by 'View PDF'. The 'Config' operation allows users to change the build command and working directory.

3.2.6 Help

The 'Help' menu allows users to view helpful tips, get details about TEXpen and Qt, and make donations.