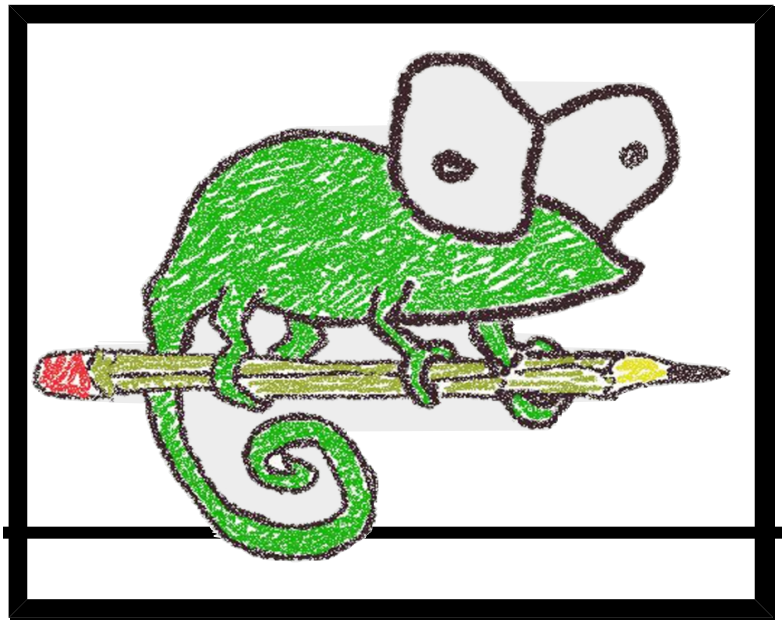
Notepad++



Software Requirements Specification

Requirements for Version 6.3

Created by **Ioannis Kalfas.**

Aristotle University of Thessaloniki, Greece

14/2/2013

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for

Notepad++

Requirements for Version 6.3

Prepared by **Ioannis Kalfas**

Τεχνολογία Λογισμικού, ΑΠΘ

14/2/2013

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Introduction

1.1 Purpose

Notepad++ is basically a plain text editor and source code editor for Windows. It has added features that makes it easier to edit code. The program, which is free and open source, features customizable color coding for a variety of programming and scripting languages. Both lightweight and robust, Notepad++ supports several display modes, including a dual-pane window, tabbed editing, which allows working with multiple open files, and a plugin system that allows more features to be added. It is a Notepad replacement that runs in the Microsoft Windows environment, designed to load quickly. The default Notepad application that comes bundled with Windows is functional, but not adequate to fulfill advanced and even some basic user needs.

1.2 Document Conventions

This document is the only one that describes the requirements of this implementation of Notepad++. It was developed and validated by **Ioannis Kalfas** (Student at the Aristotle University of Thessaloniki, Department of Informatics). This document is up to date on the 14 February 2013.

It was partly developed in Windows 8 with the use of MS Office 2010. Most sections and tables were made in Ubuntu 12.10 with the use of LibreOffice Writer. Notepad++ features were also tested in Ubuntu OS through Wine application during the creation of this document.

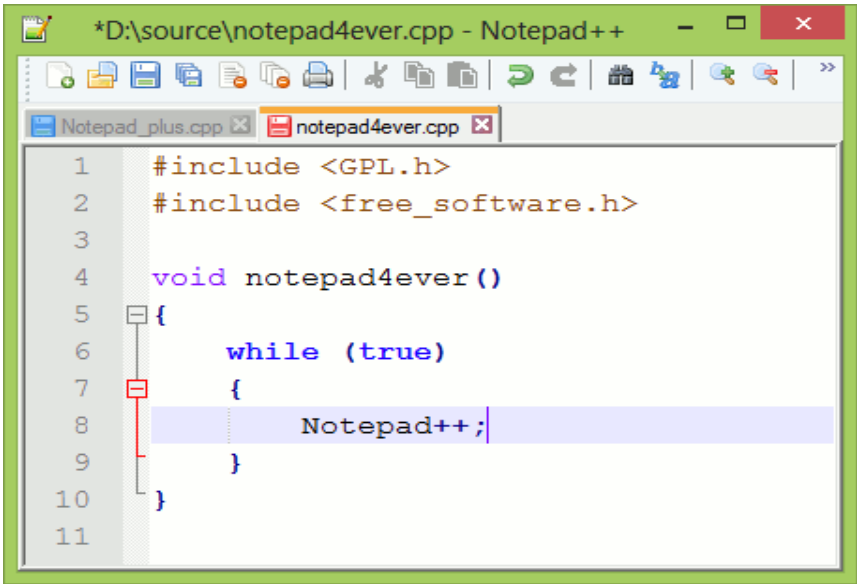
- **Font Used**: Times; Times New Roman
- **Text size**: **12** *(20 for Section Titles and 18 for Subsection Titles)*

1.3 Intended Audience and Reading Suggestions

This document is intended for the curious end user, developer or project managers who are seeking a detailed documentation of the software. The document is in plain, simple English so that even the newest computer user can read and understand, yet still technically sound enough to address the technicalities that encompass the project. The potential developer can use this document as a guide to trace the origins, state and maybe build on the current software. It is suggested that experienced readers should skip the introduction, as it refers almost entirely to topics that inexperienced users would find useful. The experienced user should begin at the second section (Product Features) where the more technical part of the documentation begins.

1.4 Project Scope

Notepad++ is distributed as free software. The project was hosted on SourceForge.net, from where it has been downloaded over 28 million times and twice won the SourceForge Community Choice Award for Best Developer Tool. The project is hosted on TuxFamily since June 2010. To display and edit text and programming language source code files, Notepad++ uses the *Scintilla editor component*. Notepad++ is a Notepad replacement with an eye toward programmers, although it should also appeal to the casual user who wants a cross between Notepad and WordPad. The interface is much simpler compared with some of its competitors. There is close cooperation between developers and the community, resulting in quickly resolved bugs and regular new releases.



A familiar row of icons with their mouse-over labels sits at the top, and one row of tabs is just below that.. All the coding tools live in the menu bar, with some represented on the toolbar. Users can compile and run macros, convert text to Hex, submit directly to W3C for validation, launch in browsers, and more.

General features/benefits (as shown at *sourceforge.net*) :

- Syntax Highlighting and Syntax Folding
- User Language Defined System
- Tabed document and Multi-View
- More than 50 languages supported
- Full Drag ‘N' Drop supported
- Macro recording and playback
- Extensible with its plugin system

1.5 References

- The **software** can be found at:
  http://notepad-plus-plus.org/ & http://sourceforge.net/projects/notepad-plus/
- For more information on the **developer** visit:
  http://notepad-plus-plus.org/contributors/author.html
- To download the **source code**, visit:
  http://svn.tuxfamily.org/notepadplus/repository/
- For general online **help and resources**, visit:
  http://notepad-plus-plus.org/resources.html
- For the **documentation site** of Notepad++ community, visit:
  http://npp-community.tuxfamily.org/
- To **report bugs**, visit:
  http://sourceforge.net/p/notepad-plus/bugs/

2.Overall Description

2.1 Product Perspective

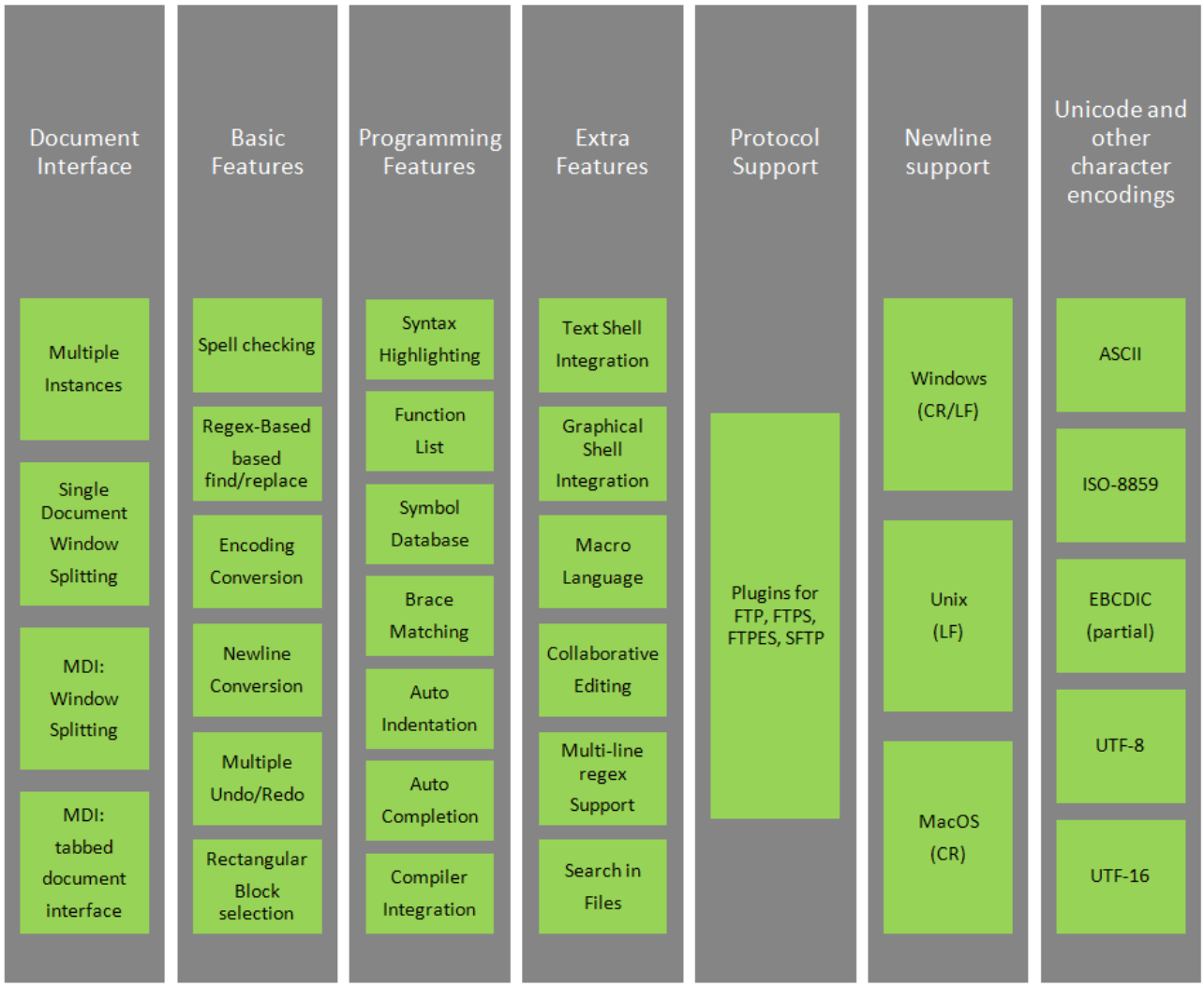
- A **text editor** is a computer program that lets us enter, store, change and print text. By text we mean characters and numbers, encoded by the computer, arranged to have meaning to users or to other programs, of course.
- A **source code editor** is a text editor program designed specifically for editing source code of computer programs by programmers.
- As mentioned above, Notepad++ is **both** text and source code editor.
  Of course, it's not the only one, so here is a table of similart projects as far as text editors are concerned:

Free Software	Freeware	Proprietary
Acme	BBEdit Lite	Alphatk
Akelpad	Eddie	BBEdit
Arachnophilia	GetDiz	CodeWright
Bluefish	HxD	GoldED
ConTEXT	Komodo Edit	CygnusEd
Crimson Editor	Led	E Text Editor
Geany	NoteTab	EditPlus
gedit	Programmer's File Editor	EmEditor
J	PSPad	Epsilon
jEdit	RJ TextEd	GWD Text Editor
JOVE	Q10	iA Writer
JuffEd	TED Notepad	Inlage
Kate	TeXShop	Kedit
Kile	TextWrangler	NoteTab
Kod		PolyEdit
Kwrite		skEdit
Leo		SlickEdit
Mcedit		Smultron
Metapad		Source Insight
MicroEMACS		SubEthaEdit
Nedit		Sublime Text
Notepad++		Tex-Edit Plus
Notepad2		TextPad and Wildedit
Pe		The SemWare Editor
Programmer's Notepad		TopStyle
Rtext		UltraEdit
Sam		Ulysses
SciTE		VEDIT
TeXnicCenter		WinEdt
TextMate		
The Hessling Editor		
UniRed		
X11 Xedit		
Yudit		
Free Software	**Freeware**	**Proprietary**

You may recognize all, some, or none of the above softwares, but in any case, you will never need them all at once. It's up to you and the work you have to do (and the money you want to spend, if you like the third column), in order to choose the right program to use. In the next section, we provide a summary of information and specifications about Notepad++, so that you can match your needs and decide if Notepad++ can fulfill them.

2.2 Product Features

According to Wikipedia's criteria on "text editor comparison", here are some Notepad++ features:



Details on its features are provided in Section 3, where we will show more advanced capabilities WYSIWYG including GUI customization, User Defined Languages, WYSIWYG printing etc.

2.3 User Classes and Characteristics

This program is expected to be used by simple users or beginners, students and developers (amateur and professional). Beginners and simple users will not often need the highly detailed functionality that Notepad++ provides them, but they will find its environment enjoyable, by using some of its basic features like "*Tabbed document and Multi-View"* and *"Full Drag 'N' Drop support"*, plus it will come in very handy to quickly note down some important notes.

Students are bound to find it a really useful tool, mainly due to its source code editing capabilities and thus, its collaboration with many frequently used programming languages and software tools like C,C++,Java, PHP, HTML, MATLAB and other.

Project managers and developers in general, can use it as their main working program through which they can write/edit code, teach others to write/edit code and take advantage of multiple features in one software.

2.4 Operating Environment

Notepad++ is a Windows-only software, so it is mainly used in Microsoft Windows. However, there are ways to use it in Linux environments through other applications (see "Wine" for linux). It does not have any specific system requirements. If your computer runs one of the supported Operating Systems, then it will be able to run Notepad++.

Windows operating systems:

- ✔ Windows95
- ✔ Windows98
- ✔ WindowsME
- ✔ Windows2000
- ✔ WindowsXP
- ✔ WindowsVista
- ✔ Windows7
- ✔ Windows8
- ✔ x32 & x64 versions

2.5 Design and Implementation Constraints

This program is really lightweight and fully loads within a second, so there are no specific system requirements. It is under GNU General Public License, which guarantees end-users the freedoms to use, study, share (copy), and modify the software.

As we previously saw at the table of section **2.2**, there is also support for some of the most common character encodings including ASCII, ISO-8859, EBCDIC(with plugin),UTF-8 and UTF-16, but there is no support for *DOS(OEM)* encoding.

The available languages for the UI are more than 50 in total, including: English, German, French, Polish, Korean, Japanese, Italian, Dutch, Portuguese, Spanish, Swedish etc.

While installing it, you will be able to check/uncheck various components according to your needs, so it will use only the necessary hard disk space.

As for protocol support, there is no native internal support for remotely editing files over a network or the internet for the following protocols: HTTP, SSH, WebDAV but there is the option of adding plugins for: FTP, FTPS, FTPES, SFTP.

Moreover, custom shortcuts of Shift-<char> cannot be set, they need an added modifier such as Ctrl or Alt. i.e. SCI_LINESCROLLUP cannot be bound to "Shift-I" as the "Add" button is greyed out.

2.6 User Documentation

To view the Notepad++ online user manual, visit :

http://npp-community.tuxfamily.org/documentation/notepad-document

It is the reference of off-line document included in the official release.

There you can find instructions on file/session/project management, editing, searching, display settings, commands, GUI elements, Shell extension etc.

There is also a link to "***Further Help***" which includes: The main site, Forums, Bug reports, Feature Requests and Patches.

You can also visit the NppWiki++ at:
http://sourceforge.net/apps/mediawiki/notepad-plus/index.php?title=Main_Page
for PluginHOWTO guides, UDL related files, project support etc.

Finally, you can go directly to the project's site on SourceForge, or Forums.

Notepad++	
Online user manual	Further Help
Official Site	Resources
SourceForge	Forums/Bug Reports
NppWiki++	PluginHOWTO

2.7 Assumptions and Dependencies

Notepad++ is “Made in Worldwide” and distributed outside of USA territory(both source code and binary) so there shouldn’t be ECCN issue. However you may need Notepad++ ECCN number to conform to US law. Here it is **EAR99**

Under the pretext of cryptographic exportation control, US government made the major FOSS hosts (SourceForge, Google code, Fedora, etc…) in USA territory to comply with the Export Administration Regulations. As a result they reject the access of FOSS resources from the 5 countries(Cuba, Iran, North Korea, Suda, and Syria) in the “black list” of US government.

A walk around from SourceForge
After complying with this law, SourceForge provided an option “Export Control: non-encryption algorithms included”. A mail to make this option explicit was sent to all project managers on SF. It’s the only FOSS host who offers such walk around as far as we know.

Announcement on official site (the 27th September 2012):
Both binaries and source code of Notepad++ have not been available on SourceForge since the 4th June 2011. Due to the difficulty of maintenance, they won’t be distributed on SourceForge anymore.

3. System Features

3.1 Use of Scintilla editing component

3.1.1 Description

Notepad++ is a graphical application that relies, like any application, on controls. Controls are elementary blocks in a graphic user interface. Scroll bars, text fields, buttons, all these and many more are controls.

One control of crucial importance for Notepad++ is the Scintilla control. This is like a stock RichEdit control - the one you find in vintage Notepad -, but with a much expanded set of

functionality related to code editing, like syntax highlighting and code folding. The visual areas where you write text, search for text, fold text are displayed by Scintilla controls (one per view).

3.1.2 Functional And Other Requirements

The Scintilla project is another open source project, found at http://www.scintilla.org. The project is completely independent of Notepad++, and Notepad++ is yet another consumer of Scintilla.

This is a core design decision, a departure from which is not realistic. It has big advantages and disadvantages:

- Whenever the Scintilla component fixes bugs or adds functionality, it is enough for a release of Notepad++ to include it, and the goodies flow in without any development work from the Notepad++ team. And we benefit from the testing pool the Scintilla project has.
- If Scintilla has limitations the developers of Scintilla assign low priority to, Notepad++ is usually stuck with them. Workarounds are usually far from trivial, when there is any.

It is assumed that the former point far outweighs the latter.

3.2 User Defined Languages

3.2.1 Description

Notepad++ supports over 50 languages through the built-in support provided by the Scintilla component. More languages can be supported, using the UDL framework.

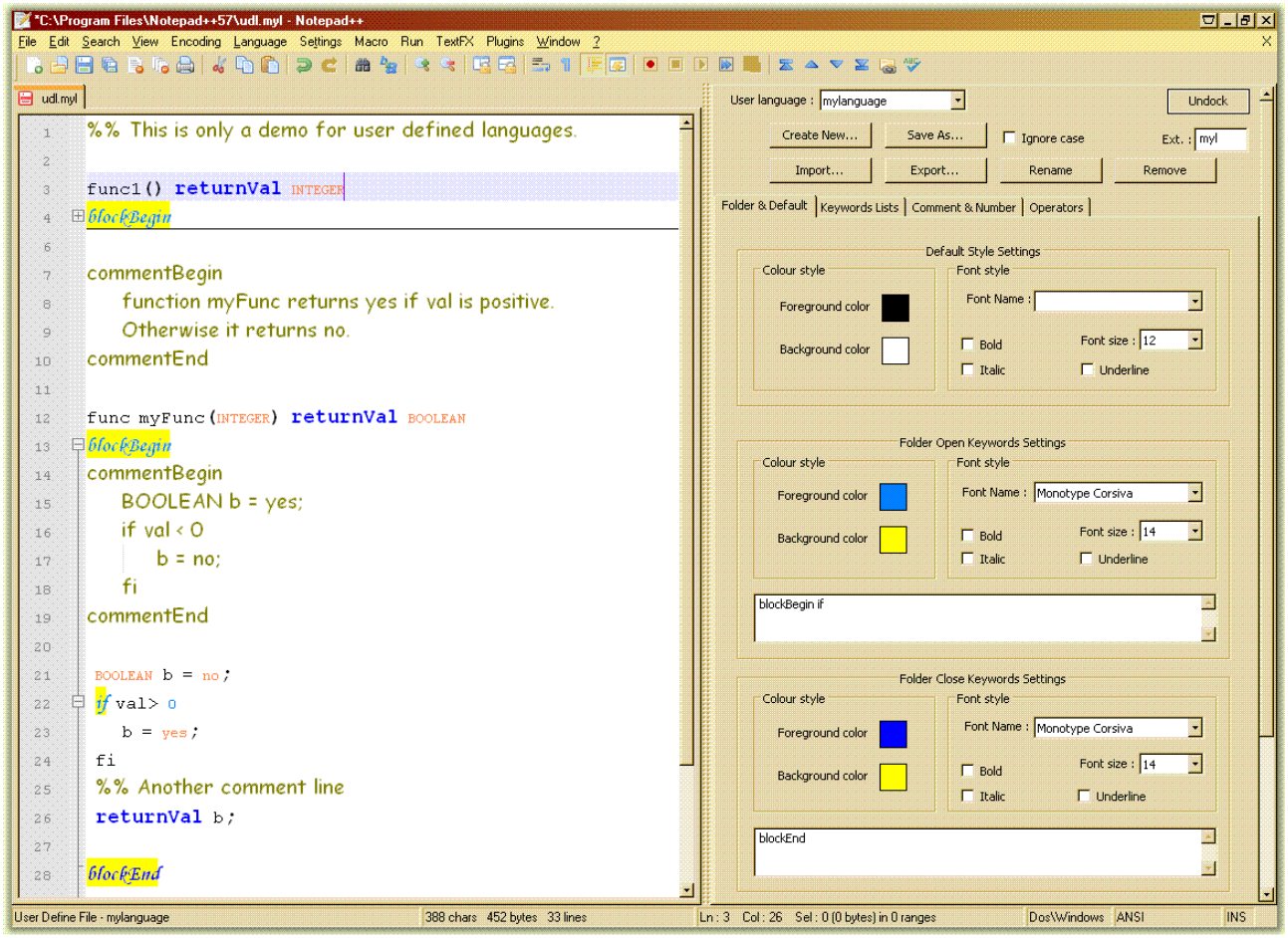
When an archive file is being supplied, it usually contains both an user language definition file and an auto-completion file. Standalone auto-completion files will be featured on this page when some are submitted.

3.2.2 Stimulus/Response Sequences

How to create your own definition (user-defined language) of a Syntax Highlighting scheme

Notepad++ makes it possible to define "languages", or more precisely highlighting schemes. The original purpose of the feature is to enable proper highlighting of files in a programming language for which an internal Scintilla lexer is not available. Some users have reported they were successfully using a custom defined language in areas unrelated to programming, like to-do lists. A directory of known User Defined Language Files is being maintained, enabling to share such files across all the user community..

Here is an example, a user defined language named mylanguage :



As you can see, the syntax highlighting and the syntax folding are applied on the document userDefineLang.xml (on the left) thanks to the definition in the User Defined Language dialog (on the right).

Please note that:

- When the dialog is undocked, a slider is displayed so as to make its transparency adjustable;
- When displaying the default ("User Define Language") language, the Rename and Remove buttons are not displayed.

NOTE: To fully understand the procedure and to see specific actions regarding UDLs, please visit: https://sourceforge.net/apps/mediawiki/notepad-plus/index.php?title=User_Defined_Languages

How to install user defined language files

Here is a list of links to user-defined languages:

https://sourceforge.net/apps/mediawiki/notepad-plus/index.php?title=User_Defined_Language_Files

To add syntax coloring from one of these, the simplest way is to open the User Defined Language panel, click "Import" and navigate to the desired file. If you wish to proceed manually, here is how:

1. Unpack to an .xml file, if zipped.
2. If you don't have an userDefineLang.xml file already, you can drop this file among your other configuration file, in the Notepad++ Install Folder. It should be named userDefineLang.xml.
    - It was reported that "creating the XML file in *C:\Program Files (x86)\Notepad++* on 64-bit Windows 7 didn't add the syntax highlighting to notepad++. I had to move the XML file to *<user>\AppData\Roaming\Notepad++* for it to work."
3. Otherwise, open both the existing and new file.
    - Select all of the new file, copy, and paste at the end of the current file.
    - This will have created a spurious *</Notepad_Plus><Notepad_plus>* pair i the middle, each tag on a line by itself. Remove these two consecutive lines.
    - Close Notepad++.

Your Languages menu will show the newly added language at the bottom, next time you launch Notepad++.

Contributing new user defined language files

There are basically two ways:

- Edit this page directly - you must have visited the wiki at least once while logged under some Sourceforge ID, and it takes a couple days from that point for you to get write rights. Please insert your entry so that the table remains sorted in alphabetical order. Looking at existing entries should give you a precise idea of the format.
    - To provide your email address for credits/contact, there is a {{Maintainer}} template which obfuscates your address for bots, yet allowing it to display clearly as a tooltip. The template is documented in Author Toolbox.
    - If your language name becomes the first in the table to start with an existing letter, say *Γ*, please move the ** to your own entry, so that Quick Access links point to it.
    - If your language name is the first ever in the table to start with some letter, say *Γ*, then you need to both
        - create a ** for your entry;

    - turn the inactive letter Γ from the Quick Access into a link, by changing it to *[[#Γ|Γ]]*
- Use the discussion page to drop inan URL or file contents. The file will be uploaded for hosting on the Notepad++ webspace,and an admin will take care of adding the entry to the master table.
- Email cchris with the file and an email address to quote as a contact address. (Send email to cchris also if you wish to submit an auto-completion file only).
- In any case, because of the format of MediaWiki markup, spaces in filenames will be replaced with underscores.

3.3 Auto-completion

3.3.1 Description & Stimulus/Response Sequences

How to create keyword auto-completion definition files

Since version 5.0 Notepad++ has support for so called Calltips, and has introduced a new way of storing autocomplete data. Now everything is stored in the XML format, which allows for easy extension of functionality. By doing so, auto-complete and calltip data are combined in a single file. Older .api plain text files are no longer used by Notepad++, and can be safely deleted if present.

The AutoComplete files are located in the "plugins\APIs" folder, to be found in the Notepad++ Install Folder, most often *C:\Program Files\Notepad++*.

The syntax of AutoComplete files is simple, but does have a few rules, most importantly correct syntax and proper sorting. If the syntax is incorrect, the XML file will fail to load and AutoComplete will be disabled. A more formal description can be found at Editing Auto Completion files.

Improper sorting (see below) can cause the AutoComplete function to behave erratic, causing it to fail on certain words.

The basic character set used to recognize keywords is made of letters a-z, A-Z, 0-9 digits and the underscore. You can add more characters - the dot is a likely candidate - by specifying he additionalWordChars parameter in the environment. The value is a string with all the extra parameters without any separators.

Syntax:

```
<?xml version="1.0" encoding="Windows-1252" ?>

<NotepadPlus>
  <AutoComplete language="C++">
    <Environment ignoreCase="no" startFunc="(" stopFunc=")" paramSeparator="," terminal=";"
additionalWordChar = "."/>
    <KeyWord name="abs" func="yes">
      <Overload retVal="int" descr="Returns absolute value of given integer">
        <Param name="int number" />
      </Overload>
    </KeyWord>
  </AutoComplete>
</NotepadPlus>
```

A small example of how the XML file is built is given above. NotepadPlus, AutoComplete and Environment are singleton elements, there should be only one of each, and all of them should be present for correctness, although it is allowed to remove the <Environment> element. Doing so will default all values to the ones given in the above example.

For keywords that are not functions, the Keyword tag is autoclosing and only has the "name" attribute. To indicate a keyword can be displayed in a calltip, add the attribute 'func' with the value "yes". In this case, the Keyword tag is a node and contains other tags.

Then, for each overload of the function, an Overload element should be added ,which specifies the behavior and the parameters of the function. A function must have at least one Overload or it will not be displayed as a calltip. The 'retVal' attribute must be present and specifies the type of the return value, but the 'descr' attribute is optional and describes the functions behavior, like a comment. You can add newlines in the description if you wish to do so. For each parameter the function takes, a 'Param' element can be added. The 'name' attribute must be present and specifies the type of the parameters and/or any name of the parameter.

In the 'AutoComplete' element you can add the 'language' attribute but it is not used by Notepad++, you can add it for completeness if you wish and can take any string you want.

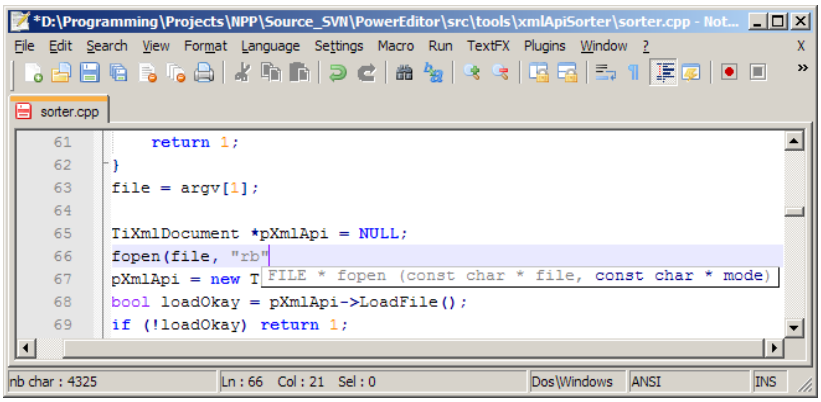
Sorting

Depending on the value of the 'ignoreCase' attribute in the 'Environment' element, the XML file has to be sorted case sensitive or case insensitive (if the attribute is absent it will default to case sensitive).

The simples approach, when building an auto-completion file, may be to first define a plain text, one word a line file of words to be recognized, then sort it, then turn lines int Keyword tags, then add all Overload information as needed. The following will focus on the sorting part. A tool will be made available which will read any given XML API file and sort it properly - not released as of v6.3.

For case sensitive sorting you can use any generic ASCII/ANSI sorter that sorts on the byte value of the characters. Simply put this means underscore is between uppercase and lowercase letters. When you have to sort case insensitive, treat lowercase letters as uppercase, that is, subtract 32 from each one. This means the underscore comes both after uppercase and lowercase letters. The default strcmpi() function in the standard C library does not seem to work correctly, but the TextFX plugin does, which is installed by default with Notepad++.

Calltip in action:



Bracket auto-completion

Some characters traditionally work in pairs, so that it makes sense to ask an editor to type them in pairs when an opening bracket is being typed - the extra closing brace being disposable.

Notepad++ does not do this, but two plugins do:

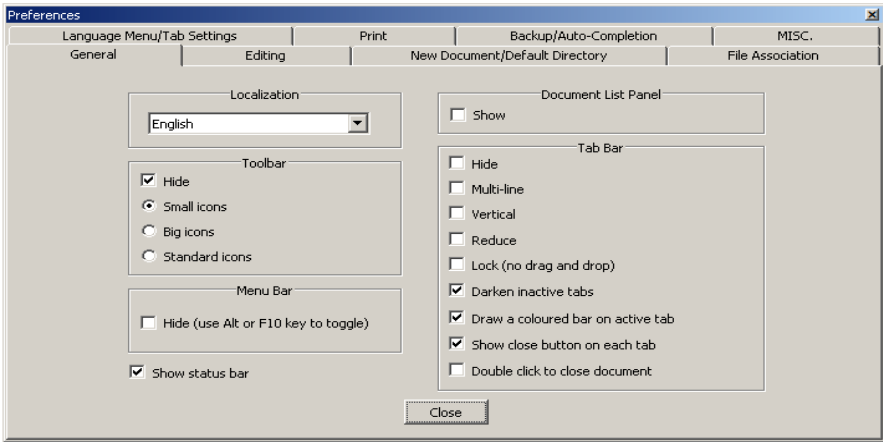
- TextFX has an option, *TextFX -> TextFX Settings -> Autoclose {([Brace*, which toggles this option on or off. But the set of brackets is not configurable.
- XBracket Lite has three sets. It provides:
    - An option to toggle auto-completion of all active sets of brackets;
    - A Settings dialog to customize what will be autoclosed:
        - The basic set of brackets being autoclosed is made of {{[". You have the option to force auto-completion even if a closing matching bracket is detected nearby.
        - You can treat single quotes as brackets
        - The auto-completion of < by > is further customizable. You can restrict it to files the extension of which is in a given set, and ask /> to close a <. These advanced options are geared towards markup languages, which use these brackets extensively.

Further, the plugin can optionally skip brackets preceded by a backslash, since this usually means they are to be taken as normal characters.

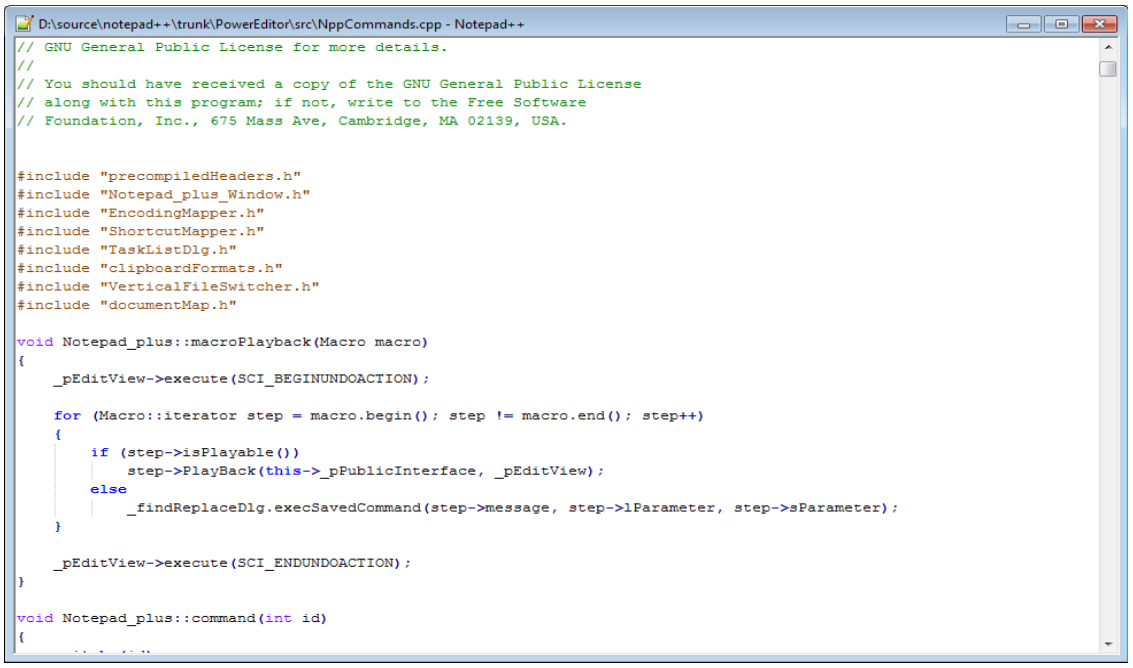
3.4 Graphical User Interface entirely customizable

3.4.1 GUIs Description

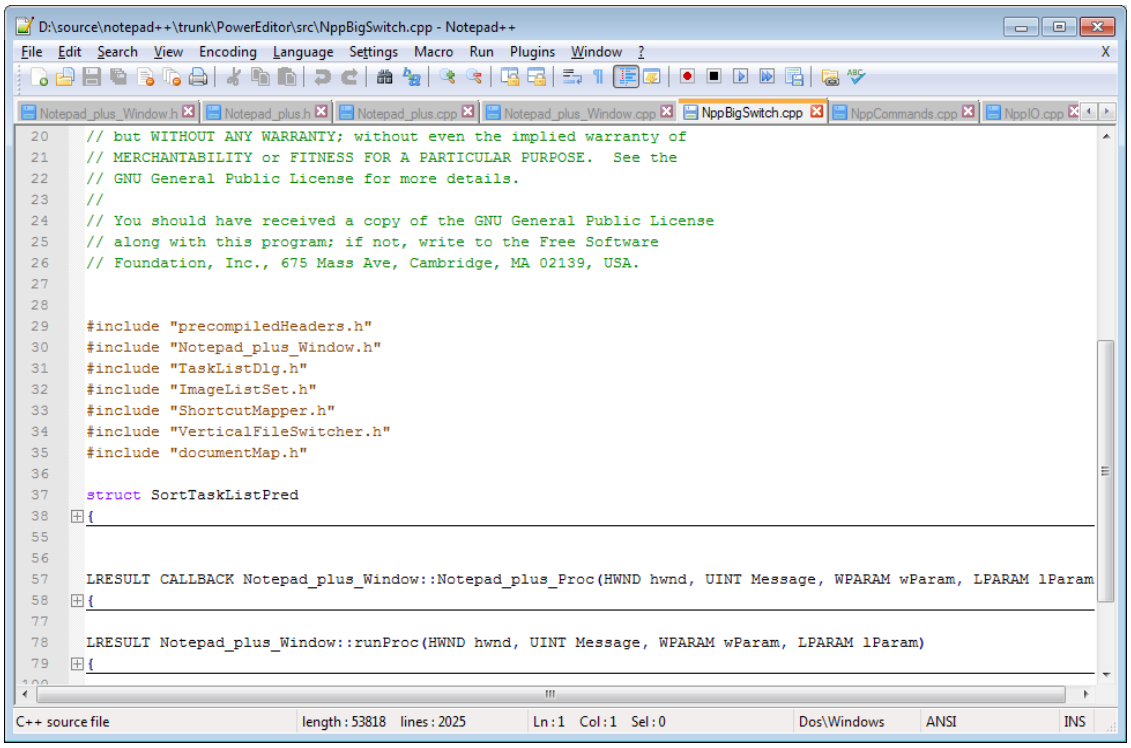
Notepad++ provides its users with the feature of customizing their Notepad++'s graphical interface according to their needs and likings. Everything is achieved through this screen.
(***Settings-->Preferences)***



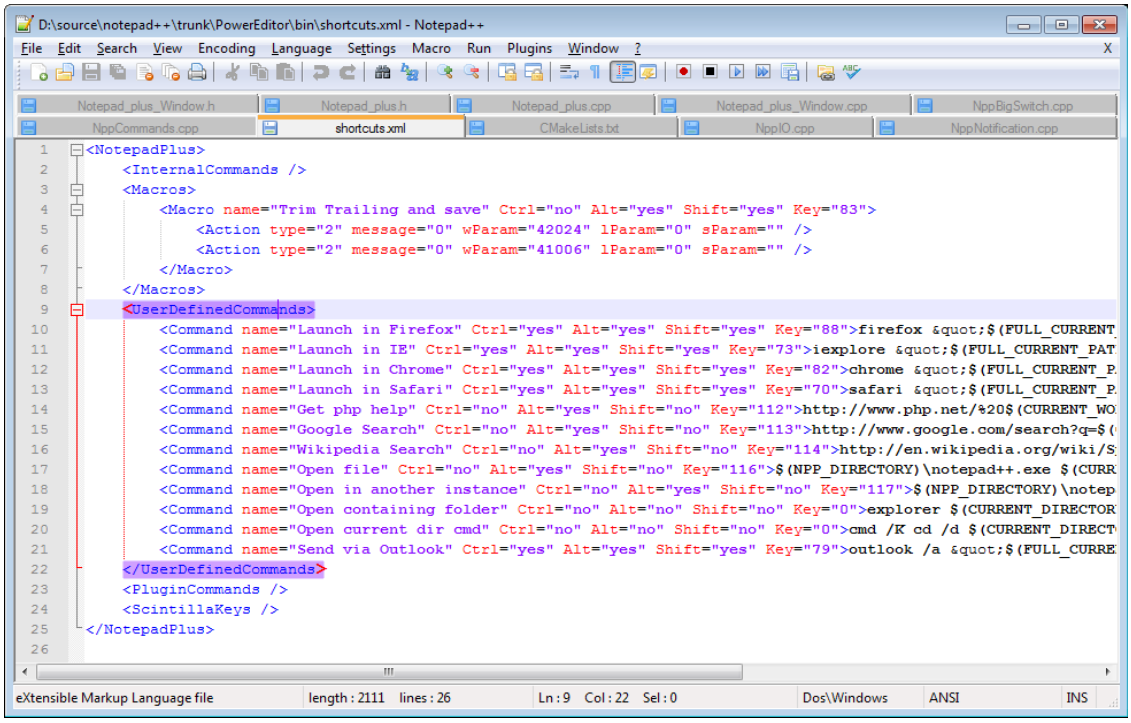
3.4.2 Minimalist



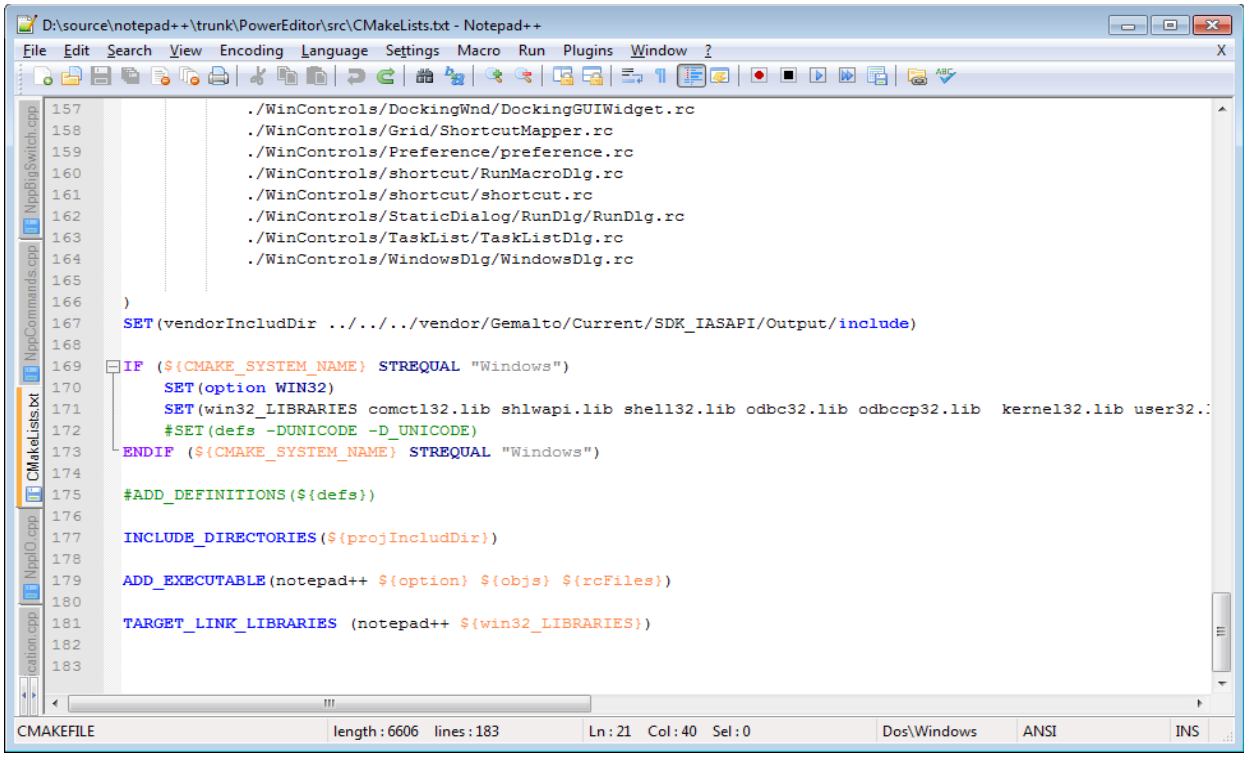
3.4.3 Tab with close button



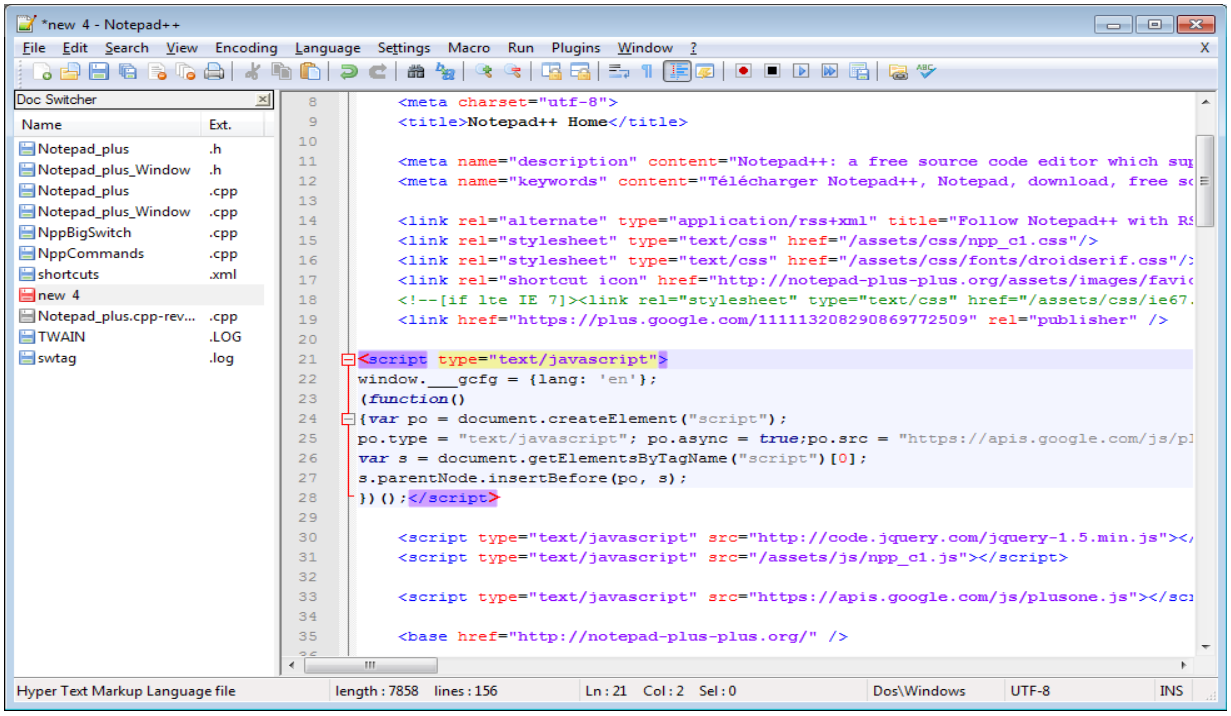
3.4.4 Multi-line tab



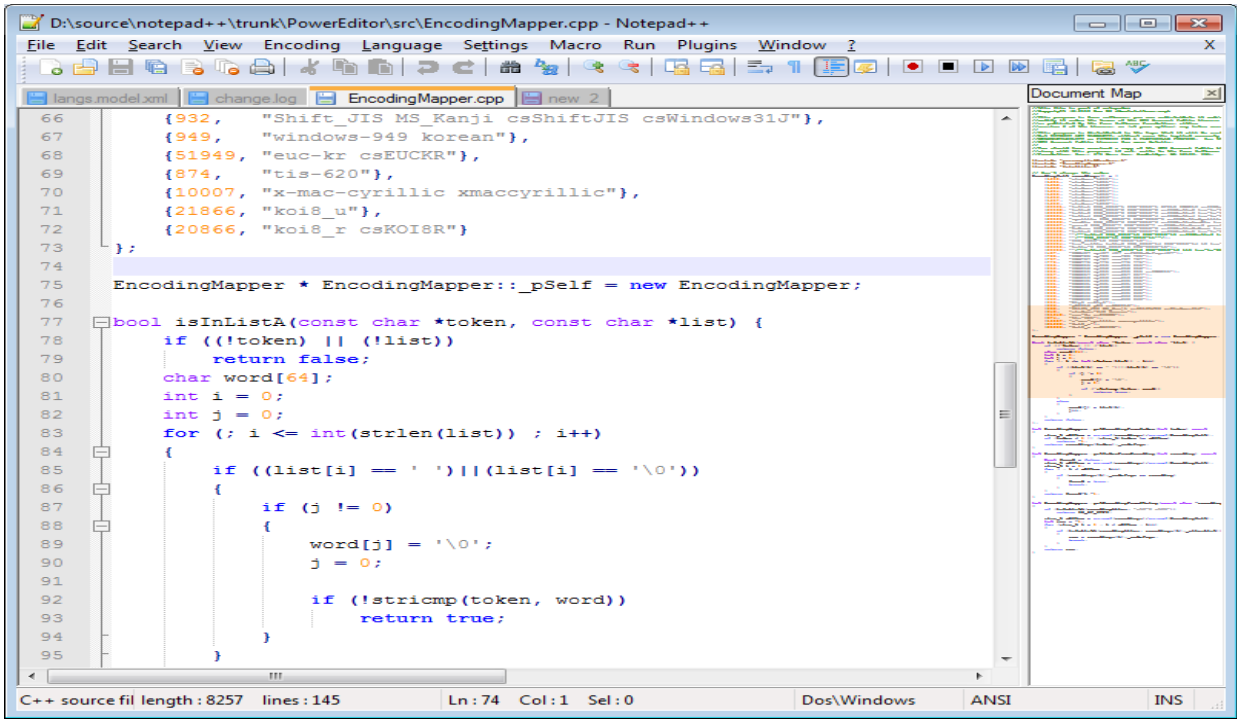
3.4.5 Vertical Tab



3.4.6 Vertical Document List



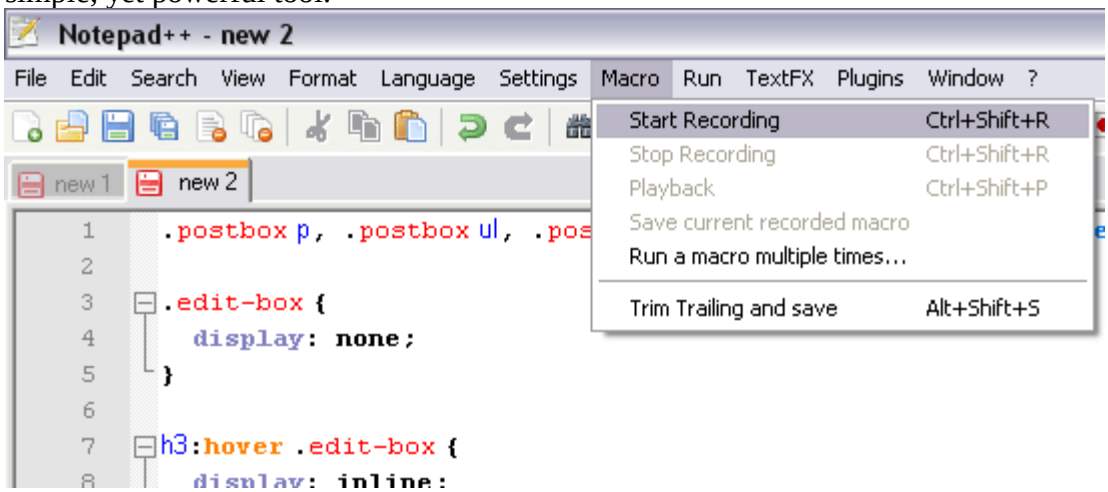
3.4.7 Document Map



3.5 Macros

3.5.1 Description

Basically, a macro is a sequence of actions you can record, save and play back. Because "action" needs to be made more precise, there are some technical points to know for optimal use of this simple, yet powerful tool.



3.5.2 Stimulus/Response Sequences

➔ **Recording a macro**

This is done by using the Macro -> Start recording menu entry, or hitting the corresponding toolbar button. Both are inactive while recording is on. The default keyboard shortcut for this action is Control+Shift+R.

But what is being recorded? To answer this, the first question is: by whom? Answer: the active Scintilla component. When recording is on, the Scintilla component that receives keystrokes and other commands informs the Notepad++ application of which actions it performed. Notepad++ saves these in a form suitable for persistent store and for playback, in shortcuts.xml.

Because Scintilla actions are being stored, there is no memory of whether user clicked a button, a menu entry or a key. And the macro will play back on a different machine, with a different localization of Notepad++ and different keyboard shortcuts. This design is excellent for portability, that is, the ability for someone's macro to be reused by as many unknown users as possible. However, it makes the recording of plugin actions tricky, because these actions may lead to different sequences of Scintilla commands. Notepad++ handles find and replace actions recording itself, as they would present the same difficulty.

➔ **Stopping the recording**

Click on the Stop recording entry menu or toolbar button, or enter the keyboard shortcut for Start recording. Actually, the shortcut is for toggling recording, this is how you'll find it named on the Shortcut mpper.

You cannot suspend recording and resume it later.

➔ **Saving the macro**

Hit the Save macro button or menu entry. If you don't save a macro and then start recording another, your previous work is gone without a warning.

3.5.3 Functional and Other Requirements

On saving the macro, you are asked for a name (mandatory) and a keyboard shortcut (optional). Several macros with the same name may coexist. When done, the Macro menu has a new entry with the macro name, and the keyboard binding if there was any.

You can change the name and keyboard shortcut of the macro in the Shortcut mapper. You can choose to remoe it from there too. The Macros -> Modify shortcut / Delete macro command brings this dialog up.

If you start hosting many macros, plugins or custom commands, you'll want to check whether some combination of keys is available prior. There is no warning about overwriting an existing shortcut. This is not a bug, as you may wish to override some command with a customized, related macro.

3.5.4 More Stimulus/Response Sequences

➔ **Playing the macro back**

This is where a macro not only is a useful can, but can also act as a roadmap.

Single playback

The macro starts playing and sending messages to Notepad++ and the active Scintilla, plainly repeating the whole recorded sequence. Always remember that you never entered parameters while recording a macro, so that you cannot customize a macro playback. A macro cannot detect special cases or make decisions. That would be called a script instead. See the ANSI only SimpleScript plugin for such an extension. Or NppJavaScript.

Multiple playback

On clicking the "Run a macro multiple times..." button or menu entry opens a dialog where to choose

- which macro to execute; the macro may be the last recorded one, even if not saved yet
- whether the number of run is fixed or not
- the fixed number of runs, should this option be chosen.

When a macro is not run a fixed number of times, it runs till it hits the end of the current document. Less than careful design can lead to infinite loops. Careful design leads to macro that nearly emulate roadmaps.

For instance, you wish to record some sort of find/replace operation. This is not directly possible. Record your macro so that it jumps to the next bookmark at the end. That way, it will hit the bottom when no more bookmarks are found. Perform the first search, use the Mark lines option to place a bookmark on all occurrences. Then launch the macro. First run does its thing and goes to second bookmark. Second run does its thing and goes to third bookmark. Last run does its thing and goes to bottom of document. Then Notepad++ stops the whole thing, and all the job is done. Remember that an unsuccessful Find Next does not stop a macro; only going over the end of document does.

3.6 Plugin Support

3.6.1 Description

Notepad++ fully supports plugin development and integration. Here is a quick start guide to explain you how to make your first plugin in less than 10 minutes, without learning how Notepad++ plugin system works.

3.6.2 Stimulus/Response Sequence - Steps to create plugin

Follow these 6 steps to make a very simple plugin:

1) Download and unzip Notepad++ Plugin Template into a new project folder with a name of your choosing.
2) Open *NppPluginTemplate.vcproj* in your Visual Studio; if this starts a project upgrade wizard, allow it to run with defaults and save the project with a new file name.
3) Define your plugin name in *PluginDefinition.h*.
4) Define the number of commands in your plugin in *PluginDefinition.h*.
5) Customize plugin commands names and associated function name (and the other stuff, optional) in *PluginDefinition.cpp*.
6) Define the associated functions.

You are guided by the following comments in both *PluginDefinition.h* and *PluginDefinition.cpp* files:

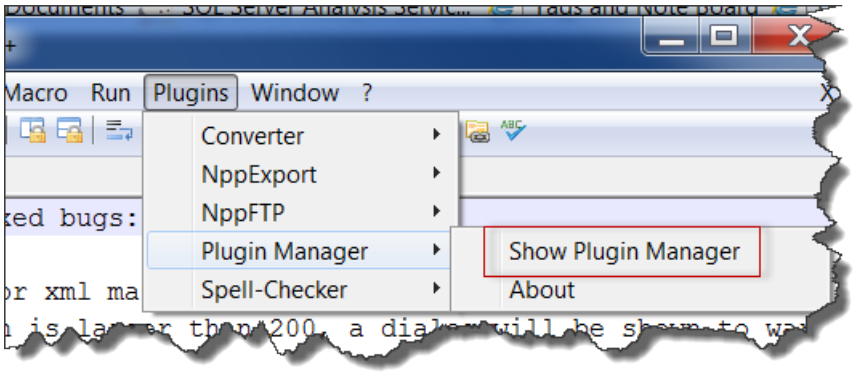
- *//-- STEP 1. DEFINE YOUR PLUGIN NAME --//*
- *//-- STEP 2. DEFINE YOUR PLUGIN COMMAND NUMBER --//*
- *//-- STEP 3. CUSTOMIZE YOUR PLUGIN COMMANDS --//*
- *//-- STEP 4. DEFINE YOUR ASSOCIATED FUNCTIONS --//*

A good sample illustrates the whole picture better than a detailed documentation; check the Notepad++ Plugin Demo to learn how to make more complex commands. However, knowledge of the Notepad++ plugin system is required if you want to accomplish more sophisticated plugin commands.

An advanced example is shown in detail in Analysing Plugin Code.

3.6.3 Plugin Central

Please visit: http://sourceforge.net/apps/mediawiki/notepad-plus/index.php?title=Plugin_Central for more information on Notepad++'s plugin system.



3.7 Turning Text into Text for Printing

3.7.1 Description

Basically, printing some text means creating a temporary file of binary data a given printer can understand and render in an expected way. On primitive OSes, the file may be implicit as characters would be sent right over the parallel cable. When printing to a file, or to a PDF/PostScript printer, the file being created is not temporary.

For this reason, printing is hardly different from exporting to some format. However, there is some specific terminology that applies to printing, because it was known long before the other methods.

3.7.2 Stimulus/Response Sequence - Printing

There are two commands, located on the File menu. Print... invokes the standard Windows dialog for choosing a printer. Print Now! skips this step and prints one copy of the whole document to the default printer.

Settings
Two tabs on the Settings -> Preferences dialog control the way Notepad++ prints a document: Print - Color and Margin and Print - Header and Footer.

The former lets you choose the four margins, in centimeters. There are also four colour schemes to choose from:

- actual colors
- inverted actual colors
- black on white
- actual foreground on white.

Additionally, there is a checkbox to toggle printing of line numbers.

The latter tab has two frames, the top one for defining the header and the bottom one to define the footer. They are otherwise identical.

The header and footer are split into a left, central and right part, the text of which can be entered in text fields. The font face, size and attributes for the whole header/footer can be chosen below these text fields.

While any text may be entered, it can be enriched with some variable quantities. The list of available variables appears above the two frames. To add a variable, select it on the dropdown list and click the Add button. The available variable quantities are:

- Full file name path: the fully qualified file name
- File name: the file name without any folder name
- File directory: the file path, without any name
- Page: the page number, in arabic digits
- Short date format
- Long date format
- Time

3.7.3 WYSIWYG

In computing, a **WYSIWYG editor** is a system in which content (text and graphics) displayed onscreen during editing appears in a form closely corresponding to its appearance when printed or displayed as a finished product, which might be a printed document, web page, or slide presentation. *WYSIWYG* is an acronym for "what you see is what you get". - “Wikipedia.org”

3.7.4 Unsupported print features

The following are not supported as of version 6.3:

- Print all opened files
- Insert a page break (you can try inserting form feed characters, but most modern printers will not act upon it).

3.7.5 Exporting to some format

The NppExport plugin can export the current document/selection as RTF or HTML. The export may go either to a file or to the clipboard. There is an extra command to Copy all formats to clipboard.

3.8 Auto update

3.8.1 Description

Notepad++ comes with a helper program, gup.exe, which checks whether there is an update for Notepad++ and performs the update.

3.8.2 Stimulus/Response Sequences

You can launch it manually using ? -> Update Notepad++, or get it to fire when Notepad++ starts up by checking the Settings -> Preferences -> MISC -> Enable Notepad++ auto-updater checkbox.

Basically, it assumes that it can connect directly to the Internet. This assumption fails on machine that use a proxy. The following are instructions on how to configure a proxy connection for the Notepad++ update.

1. Start GUP telling it you are providing options:
    - Under a command prompt, which you may open by typing cmd.exe in the Start menu -> Run dialog, type:

      gup -options

      If the current directory is not the one gup.exe lives in, cd to that folder before launching gup. Using the full path will not work. With Windows Vista/7, you may need to open a command prompt as administrator, or settings won't be saved.
    - or you can create a GUP shortcut for passing -options parameter to GUP, then double click on the shortcut.
2. A popup dialog is shown. Set your proxy server and port. You can fill the proxy server field with
    - proxy.fully.qualified.domain.name
      http://proxy.fully.qualified.domain.name
    - or ip.value.of.proxy
      http://ip.value.of.proxy
3. then click OK.

3.8.3 Functional Requirements

If your proxy requires authentication, you can pass credentials using <user>:<password>@<proxy>, but beware your credentials will be stored in plain text in the GUP configuration file, also GUP uses basic authentication thereby credential are sent on the network using just a simple Base64 encoding, very easy to decode.

GUP is an open source project on Sourceforge and Tuxfamily.org.

When a new version of Notepad++ is made available, there is a short delay - 15 days - before updates from Notepad++.exe are enabled. This prevents critical bugs to propagate by giving time to spot them and quickly issue a corrective version. The delay affects both auto updates and the

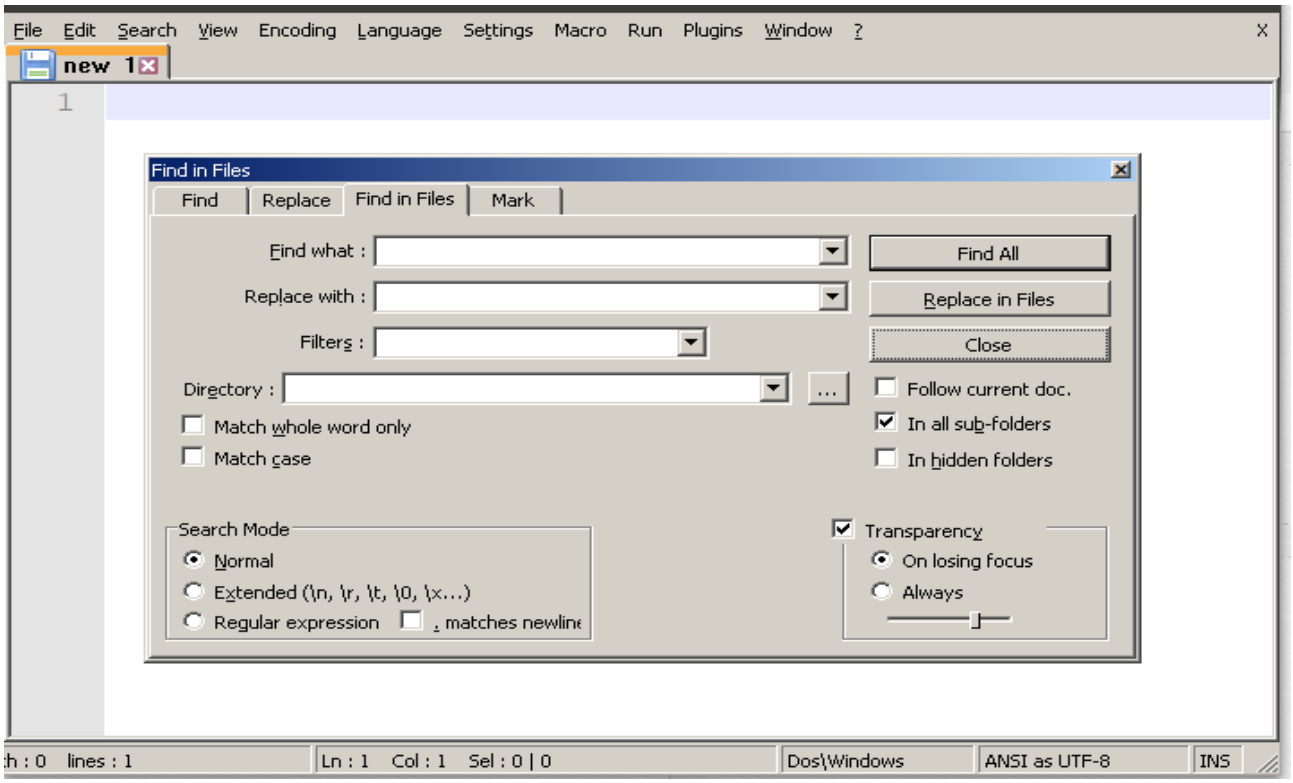
? -> Update Notepad++ command.

3.9 Search and Replace

Looking for text is a very basic functionality even Notepad offers. So is replacing text. Editors differ in the available options, ways to enter text and interaction between the search/replace operation and other editor features.

Notepad++ features 3 search and replace interfaces:

- Regular search/replace dialogs (Search menu)
- TextFX Quick Find/Replace
- Incremental search, on the Search menu.

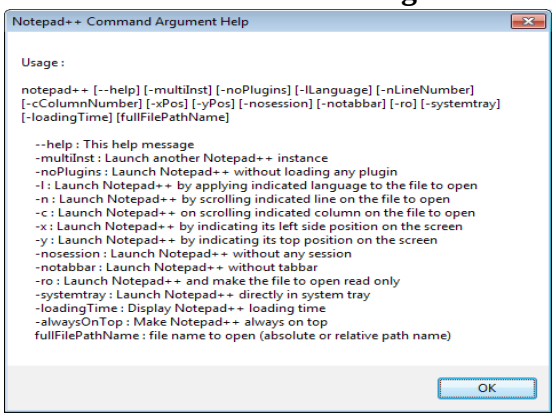


3.10 Other Features

3.10.1 Bookmark

- Hit Control+F2 to set a bookmark on any line of code and then hit F2 to jump between bookmarks. Shift+F2 goes back a bookmark.

3.10.2 Launch with different arguments



3.10.2 Zoom in – Zoom Out

From the Menu ---- View ---> Zoom

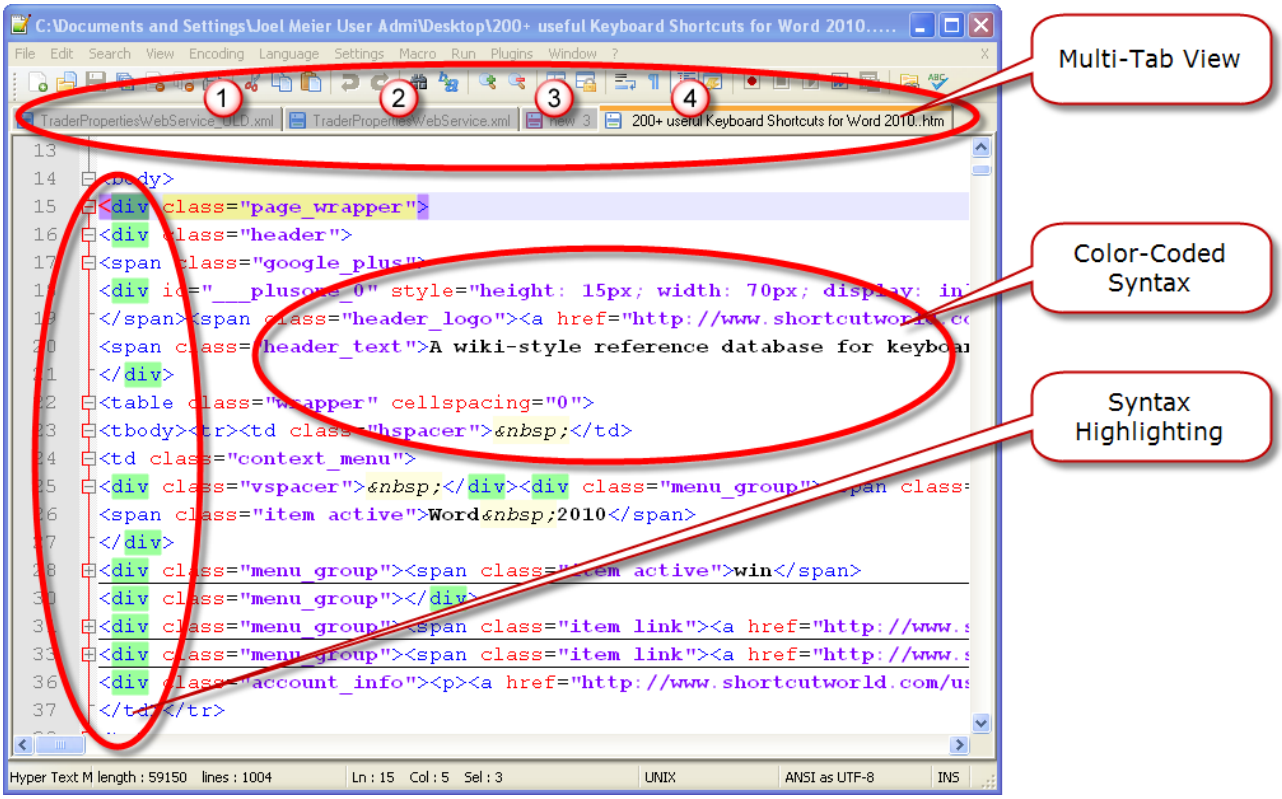
- Press Control+ Num+ or Control + MouseWheelUp to Zoom in.
- Press Control+ Num- or Control + MouseWheelDown to Zoom out.

3.10.3 Syntax Highlighting and Syntax Folding

Notepad++'s feature to highlighting and coloring programming language syntax and syntax folding.

3.10.4 Multi-document (Tab interface)

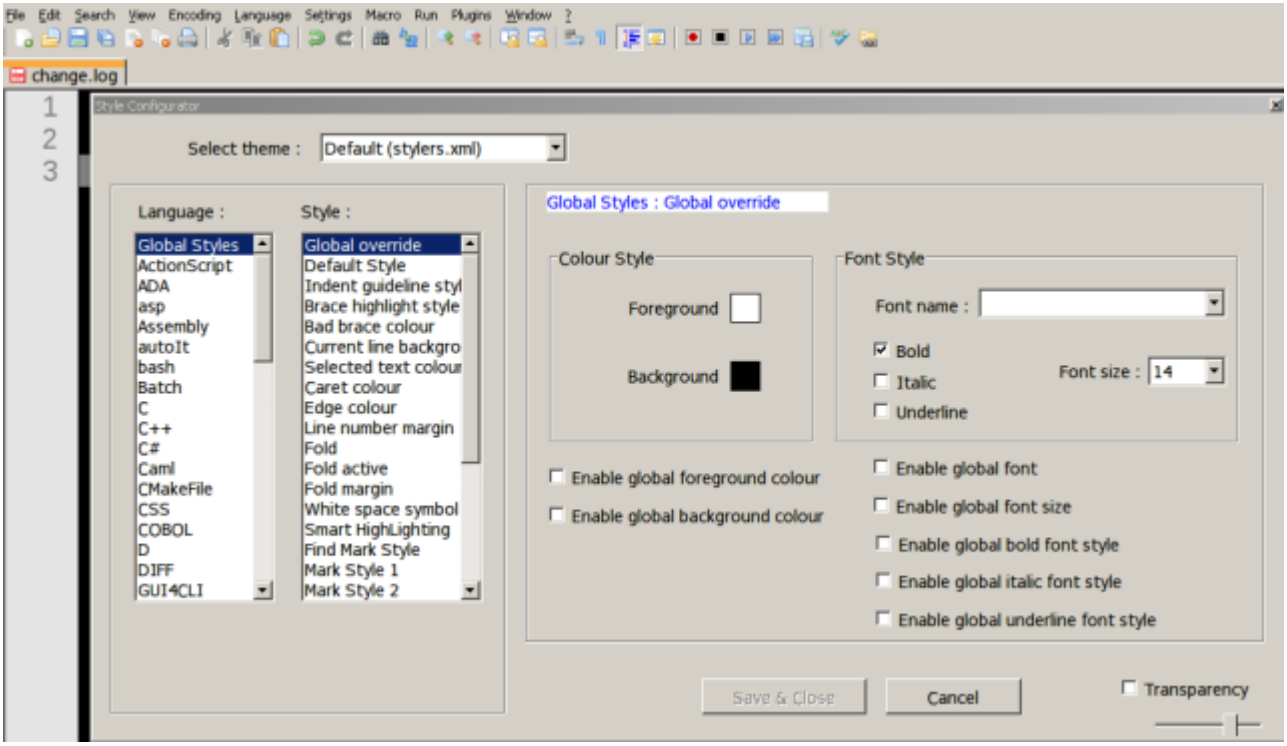
It's possible to open multiple documents by using different tabs for each one of them.



3.10.5 PCRE (Perl Compatible Regular Expression) Search/Replace

The PCRE library is a set of functions that implement regular expression pattern matching using the same syntax and semantics as Perl 5. PCRE has its own native API, as well as a set of wrapper functions that correspond to the POSIX regular expression API. The PCRE library is free, even for building proprietary software.

3.10.6 Multi Language/Scripting Support



4. External Interface Requirements

4.1 Interface

The developer of Notepad++ used C++ to build the application and uses pure **Win32 API** and **STL** which ensures a higher execution speed and smaller program size.

Win32 is the 32-bit API for modern versions of Windows. The API consists of functions implemented, as with Win16, in system DLLs. The core DLLs of Win32 are kernel32.dll,

user32.dll, and gdi32.dll. Win32 was introduced with Windows NT. The version of Win32 shipped with Windows 95 was initially referred to as Win32c, with the "c" standing for "compatibility", but this term was later abandoned by Microsoft in favour of Win32.

The **Standard Template Library** (**STL**) is a C++ software library that influenced many parts of the C++ Standard Library. It provides four components called *algorithms*, *containers*, *functional*, and *iterators*.[1]

The STL provides a ready-made set of common classes for C++, such as containers and associative arrays, that can be used with any built-in type and with any user-defined type that supports some elementary operations (such as copying and assignment). STL algorithms are independent of containers, which significantly reduces the complexity of the library.

The STL achieves its results through the use of templates. This approach provides compile-time polymorphism that is often more efficient than traditional run-time polymorphism. Modern C++ compilers are tuned to minimize any abstraction penalty arising from heavy use of the STL.

The STL was created as the first library of generic algorithms and data structures for C++, with four ideas in mind: generic programming, abstractness without loss of efficiency, the Von Neumann computation model,[2] and value semantics.

By optimizing as many routines as possible without losing user friendliness, Notepad++ is trying to reduce the world carbon dioxide emissions. When using less CPU power, the PC can throttle down and reduce power consumption, resulting in a greener environment.

5. Other Nonfunctional Requirements

5.1 Licence

http://www.gnu.org/licenses/gpl.html

The **GNU General Public License** (**GNU GPL** or **GPL**) is the most widely used free software license, which guarantees end users (individuals, organizations, companies) the freedoms to use, study, share (copy), and modify the software. Software that ensures that these rights are retained is called free software. The license was originally written by Richard Stallman of the Free Software Foundation (FSF) for the GNU project.

The GPL grants the recipients of a computer program the rights of the Free Software Definition and uses copyleft to ensure the freedoms are preserved whenever the work is distributed, even when the work is changed or added to. The GPL is a copyleft license, which means that derived works can only be distributed under the same license terms. This is in distinction to permissive free software licenses, of which the BSD licenses are the standard examples. GPL was the first copyleft license for general use.

5.2 Safety Requirement

It is programmed in such a way, that it should not create any problems with any machine on which it is run; while it is executed within the guidelines of the requirements stated earlier. Also there should not be a case where the application, when used properly will cause any data loss or any damage to the machine.

5.3 Communication and support

There is a friendly environment throughout Notepad++'s community with a lot of contributing programmers both in coding and bug reporting. The support through forums is working fast as well as the development of the new versions of the application. This results in new versions released often with clean and advanced code.

6. GLOSSARY

SRS	Software Requirements Specification
XML	Extensible Markup Language
UTF	UCS Transformation Format
UCS	Universal Character Set
GUI	Graphical User Interface
HTTP	Hypertext Transfer Protocol
FTP	File Transfer Support
PHP	PHP: Hypertext Preprocessor
ASCII	American Standard Code for Information Interchange
API	Application programming interface
Npp	Notepad plus plus (Notepad++)
ISO	International Organization for Standardization
SSH	Secure Shell