



**CODE
PROJECT**
For those who code

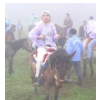
 Search for articles, questions, tips


[home](#) [articles](#) [quick answers](#) [discussions](#) [features](#) [community](#) [help](#)

Articles » Platforms, Frameworks & Libraries » Libraries » General



DEELX - Regular Expression Engine for C++



sswater shi, 26 Dec 2006

CPOL

Rate: ★★★★★

★★★★★ 4.68 (22 votes)

DEELX regular expression engine is the most convenient and easiest engine to use.

Downloads for C++



[Download from homepage - 16 KB](#)



[Download from CodeProject - 16 KB](#)



[Download demo project - 16 KB](#)

Download Unit for Delphi (statically linked into Delphi project)



[Download DEELX Unit for Delphi - 21 KB](#)



[Download Source of DEELX Unit for Delphi - 39 KB](#)



[Download Demo Delphi Project - 23 KB](#)

Download ActiveX for VB



[Download Source of ActiveX for VB - 25 KB](#)



[Download Demo VB Project - 2 KB](#)

Download Dynamic Link Version



[Download DLL version binary file - 42 KB](#)



[Download DLL version source file - 19 KB](#)



[Download DLL version demo project - 84 KB](#)

Introduction

DEELX is a simple regular expression engine coded in pure C++.

All source code of DEELX is just only one single header file (*deelx.h*). Without any other CPP or lib, you need not create a project alone for DEELX when you want to use it, and also you need not worry about link problems.

DEELX has a good compatibility that it can be compiled by Visual C++ 6.0, 7.1, 8.0 (Windows), gcc(Cygwin), gcc(Linux), gcc(FreeBSD), Turbo

C++ 3.0(DOS), C++ Builder(Windows), etc. DEELX is coded using template, so `char`, `wchar_t` and other simple types can be used as its base type.

DEELX regular expression engine is the most convenient and easiest engine to use.

Features

DEELX supports PERL compatible regular expression syntax. Besides the basic pattern syntax, DEELX has implemented many extended syntaxes:

- Right to left match mode
- Named capture group
- Remark
- Zero-width assertion
- Independent expression
- Conditional expression
- Recursive expression
- Replace operation

Ideas

The most important idea of DEELX is the concept of "Element of Regular Expression". In the source code, I call it "ELX".

I regard every kind of element as "Abstract Element" => "`ElxInterface`". This `ElxInterface` has two methods: `Match()` and `MatchNext()`. `Match()` means to try to match the first time. If `Match()` returns `true`, but what matched is not what you want, call `MatchNext()` means to discard the result and try to get another successful match. If the result is still not what you want, go on calling `MatchNext()` till it returns `false` or you get what you want.

For example, two elements: `(.*)(a)`

1. To call the "`Match()`" method of the first element`(.*)` will let it match all the text. But now the second element`(a)` will fail to match, so the match result of the previous "`Match()`" is not what I want.
2. The next step is to call the "`MatchNext()`" method of the first element`(.*)`. This step is also called "`backtrack`". The first element`(.*)` will reduce its repeat times, then the second element`(a)` will again try to match.
3. So on, one possible final result is that: even the first element`(.*)` reduced to zero times, the second element still failed to match, so the overall regular expression failed to match.
4. Another final result is that: when the first element`(.*)` reduced to a certain times, the second element succeeded to match, so the overall regular expression succeeded.

Match operations of all kinds of elements can be abstracted into "`Match()`" and "`MatchNext()`" operations.

That is DEELX's idea.

Demo in C++

Hide Shrink ▲ Copy Code

```
#include "deelx.h"

int main(int argc, char * argv[])
{
    // text

    char * text = "12.5, a1.1, 0.123, 178";

    // declare

    static CRegexpt <char> regexp("\\b\\d+\\.\\d+", IGNORECASE | MULTILINE);

    // Loop

    MatchResult result = regexp.Match(text);
```

```

while( result.IsMatched() )
{
    printf("%.s\n", result.GetEnd() - result.GetStart(), text + result.GetStart());

    // get next

    result = regexp.Match(text, result.GetEnd());
}

return 0;
}

```

Regex flag definition:

Hide Copy Code

```

enum REGEX_FLAGS
{
    NO_FLAG          = 0,
    SINGLELINE       = 0x01,
    MULTILINE        = 0x02,
    GLOBAL           = 0x04,
    IGNORECASE       = 0x08,
    RIGHTTOLEFT      = 0x10,
    EXTENDED         = 0x20,
};

```

Wrap for Delphi (Statically Linked into Delphi Project)

Use Borland C++ Builder to compile DEELX into a .obj file, then link this .obj file into a Delphi Unit: *DEELX.dcu*.

Hide Shrink ▲ Copy Code

```

uses
    DEELX;

var
    result:TMatchResult;
    re:TRegexpA;

begin
    result := TMatchResult.Create();
    re := TRegexpA.Create(Edit1.Text, IGNORECASE + MULTILINE); // the 2nd is 'FLAG's

    re.Match(Edit2.Text, result);

    if result.IsMatched() then
    begin
        Edit2.SelStart := result.GetStart();
        Edit2.SelLength := result.GetEnd() - result.GetStart();
    end
    else
    begin
        Edit2.SelLength := 0;
    end;

    re.Destroy;
    result.Destroy;
end;

```

Regex flags definition:

Hide Copy Code

```

const
    NO_FLAG          = $00;
    SINGLELINE       = $01;
    MULTILINE        = $02;
    GLOBAL           = $04;
    IGNORECASE       = $08;
    RIGHTTOLEFT      = $10;

```

Wrap to ActiveX for VB

Wrap DEELX to an ActiveX plugin, so DEELX can be used in VB or ASP file.

[Hide](#) [Copy Code](#)

```
Private pos As Integer
Private re As New RegExLab.RegExp

Private Sub Command1_Click()
    re.Compile (Text1.Text, "igm") ' the 2nd parameter is 'FLAG's

    re.Match Text2.Text, pos

    If re.IsMatched Then
        pos = re.End
        Text2.SelStart = re.Begin
        Text2.SelLength = re.End - re.Begin
    Else
        pos = -1
        Text2.SelLength = 0
    End If
End Sub
```

The flags are the same as **JScript.Regexp**:

[Hide](#) [Copy Code](#)

```
s - SINGLELINE
m - MULTILINE
g - GLOBAL
i - IGNORECASE
r - RIGHTTOLEFT
x - EXTENDED
```

DLL Version of DEELX

The DLL version of deelix uses stdcall format for every function, because Visual Basic can call stdcall only.

The *demo.zip* contains two projects: one is in Visual Basic, the other is in Delphi.

References and Acknowledgements

[Homepage](#) - I'm the author, this is the homepage of DEELX.

License

This article, along with any associated source code and files, is licensed under [The Code Project Open License \(CPOL\)](#)

Share



About the Author



sswater shi

Software Developer (Senior)

China

Begin coding from basic, since 1994. Interested in coding and database and website constructing.

My website: <http://www.regexlab.com/> - Regular Expression Laboratory

The easiest regex engine: <http://www.regexlab.com/deelx/>

You may also be interested in...



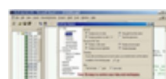
10 Ways to Boost COBOL Application Development



Generate and add keyword variations using AdWords API



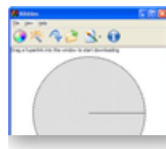
Visual COBOL New Release: Small point. Big deal



Window Tabs (WndTabs) Add-In for DevStudio



SAPrefs - Netscape-like Preferences Dialog



WTL for MFC Programmers, Part IX - GDI Classes, Common Dialogs, and Utility Classes

Comments and Discussions

Add a Comment or Question

Search Comments

Go

Spacing

Relaxed

Layout

Normal


























































Per page

25

Update

First Prev Next


How do I know if regex was compiled without errors?	_PPS_	18-Sep-13 22:53
Re: How do I know if regex was compiled without errors?	_PPS_	18-Sep-13 23:23
feature request	masotta	4-May-11 10:09
My vote of 5	masotta	3-May-11 9:01
capturing all pattern occurrence [modified]	apple77	7-Jan-11 12:57
Re: capturing all pattern occurrence	apple77	12-Jan-11 5:17

 help in regex 	 Member 3608330	27-Jul-10 10:45
 Re: help in regex 	 sswater shi	28-Jul-10 0:02
 Is there a later version? 	 Nicholas Kingsley	22-Jun-10 17:09
 Re: Is there a later version? 	 sswater shi	27-Jul-10 23:58
 Strange 	 _mushr00m_	2-Dec-09 9:31
 avoid {0} in source code [modified] 	 jjshean	16-Nov-09 9:50
 Matching some patterns takes too long 	 jjshean	24-Oct-09 14:58
 Re: Matching some patterns takes too long 	 sswater shi	24-Oct-09 15:31
 Re: Matching some patterns takes too long 	 jjshean	25-Oct-09 22:00
 How can I free memory after processing regular match/replace? 	 ISL08s	7-Oct-09 13:09
 Re: How can I free memory after processing regular match/replace? [modified] 	 James 03x	7-Oct-09 21:44
 Re: How can I free memory after processing regular match/replace? 	 sswater shi	8-Oct-09 4:28
 Re: How can I free memory after processing regular match/replace? 	 sswater shi	8-Oct-09 4:26
 Re: How can I free memory after processing regular match/replace? 	 James 03x	8-Oct-09 10:33
 Bug found 	 ISL08s	3-Oct-09 12:28
 Re: Bug found 	 ISL08s	3-Oct-09 12:46
 Re: Bug found 	 sswater shi	3-Oct-09 16:16
 Re: Bug found 	 ISL08s	4-Oct-09 21:53
 Re: Bug found 	 ISL08s	4-Oct-09 22:03
<div> Last Visit: 13-May-17 8:57 Last Update: 13-May-17 9:40 <div>Refresh</div> <div>1 2 3 Next »</div> </div>		

 General
 News
 Suggestion
 Question
 Bug
 Answer
 Joke
 Praise
 Rant
 Admin

Use Ctrl+Left/Right to switch messages, Ctrl+Up/Down to switch threads, Ctrl+Shift+Left/Right to switch pages.

[Permalink](#) | [Advertise](#) | [Privacy](#) | [Terms of Use](#) | Mobile
Web02 | 2.8.170510.2 | Last Updated 26 Dec 2006

 Sprache auswählen | ▼
Layout: [fixed](#) | [fluid](#)

Article Copyright 2006 by sswater shi
Everything else Copyright © [CodeProject](#), 1999-2017