
Subject: Free source code diagramming programs

Posted by [idlwizard-1@yahoo.com](#) on Sun, 09 Apr 2006 21:24:41 GMT

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The latest revision of my source code diagramming programs are available at

<http://www.geocities.com/grunes/diagram.html>

These programs diagram source code in the following languages:

C and C++

FORTRAN

HTML (very incomplete)

IDL, PV-WAVE, GDL and FL

They do things like draw lines showing the start and end of routines and blocks, put * next to jumps, and = next to commented out sections, and can warn you of certain classes of error.

They can help you find problems in your own code, or help you look at long complicated legacy code other people give you.

The programs themselves are in FORTRAN. I know that is a problem for users of other programming languages, but it is freely available as g77 or g95 under Cygwin (under Windows) or Linux, and is available on many other platforms.

Subject: Re: Free source code diagramming programs

Posted by [Brooks Moses](#) on Tue, 11 Apr 2006 08:58:22 GMT

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Ben Pfaff wrote:

> "mitch grunes" <idlwizard-1@yahoo.com> writes:

>

>> +----- subroutine a(x) | 1

>> |+----- do i=1,5 | 2

>> ||+----- if(i/2*.eq.i)then | 3

>> ||| x=x*i | 4

>> ||+----- else | 5

>> ||| x=x/i | 6

>> ||+----- endif | 7

>> |+----- enddo | 8

>> +----- end | 9

>

> Do you actually find it easier to follow the lines or to look at
> the indentation? I'd take indentation over a snaking maze of

> lines any day.

If you print out the text with the lines, and trace over them in colored markers of various colors, they're pretty easy to follow. :)

- Brooks

--

The "bmoses-nospam" address is valid; no unmunging needed.

Subject: Re: Free source code diagramming programs

Posted by [rlb](#) on Tue, 11 Apr 2006 12:38:14 GMT

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Brooks Moses <bmoses-nospam@cits1.stanford.edu> wrote:

> Ben Pfaff wrote:

>> "mitch grunes" <idlwizard-1@yahoo.com> writes:

>>

>>> +----- subroutine a(x) | 1

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> If you print out the text with the lines, and trace over them in colored
> markers of various colors, they're pretty easy to follow. :)

Well yeah, but it's a lot of hard work to trace over 3914 lines of
useless Usenet post...

Richard

Subject: Re: Free source code diagramming programs

Posted by [idlwizard-1@yahoo.com](#) on Wed, 12 Apr 2006 12:12:43 GMT

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> Well yeah, but it's a lot of
> hard work to trace over
> 3914 lines of useless Usenet post...

OK, next time I'll limit the source code to alt.sources, or maybe find another free web hoster that lets me store source code files.

Didn't occur to me that some Usenet reading programs make you read everything.

As to the Ben Pfaff, who preferred indentation, I do that on my own code. It's good enough for short programs, if I make no mistakes.

But the next time someone hands you a 20000 or so line legacy program developed by 200 people over 30 years, that no one alive understands, you may appreciate whatever help you can get. There is a lot of code out there like that. The definition of a professional is that you do what you are paid to do.

Brooks Moses's idea of coloring indentation stuff to make it more clear sounds neat. But a lot of work - I was trying to stay away from postscript.

Subject: Re: Free source code diagramming programs
Posted by slebetman@yahoo.com on Wed, 12 Apr 2006 12:53:49 GMT
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idlwizard-1@yahoo.com wrote:

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> available at
>
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>
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> users of other programming languages, but it is freely available as g77
> or g95 under Cygwin (under Windows) or Linux, and is available on many
> other platforms.

Well... my favourite text editor already does what your program do and
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highlights the relevant line when the cursor is on either the opening
or closing brace {}. On top of that it does syntax highlighting. On top
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and save as HTML the nicely formatted code along with the nice lines.
The only difference is that my editor draws lines based on indentation
while your program auto-indent and draws lines based on braces. But
that's OK, that's what "indent" is for. Oh and yes my editor supports
syntax of more than 40 different languages including C/C++, Tcl,
Fortran, Forth, VB, Perl...

Subject: Re: Free source code diagramming programs
Posted by [Edward Gregor](#) on Wed, 12 Apr 2006 12:58:27 GMT
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slebetman@yahoo.com wrote:

> idlwizard-1@yahoo.com wrote:
>> The latest revision of my source code diagramming programs are
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> syntax of more than 40 different languages including C/C++, Tcl,
> Fortan, Forth, VB, Perl...
>

May I ask which editor you are using?

Subject: Re: Free source code diagramming programs

Posted by [Gary L. Scott](#) on Wed, 12 Apr 2006 14:54:06 GMT

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mitch grunes wrote:

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>> hard work to trace over

>> 3914 lines of useless Usenet post...

>

>

> OK, next time I'll limit the source code to alt.sources, or maybe find
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> developed by 200 people over 30 years, that no one alive understands,
> you may appreciate whatever help you can get. There is a lot of code
> out there like that. The definition of a professional is that you do
> what you are payed to do.

>

> Brooks Moses's idea of coloring indentation stuff to make it more clear
> sounds neat. But a lot of work - I was trying to stay away from
> postscript.

>

On windows, color would be quite easy using an RTF edit box. You can then output the RTF content to disk. RTF is widely supported as an import format to most word processors on other platforms and it remains editable. Postscript is a printer data stream. It shouldn't be used as a document interchange format. I would think that it would be desirable for this output to remain editable so that you can import it into presentations or other documents and tweak it (fonts, spacing, etc).

--

Gary Scott
mailto:garyscott@ev1.net

Fortran Library: <http://www.fortranlib.com>

Support the Original G95 Project: <http://www.g95.org>

-OR-

Support the GNU GFortran Project: <http://gcc.gnu.org/fortran/index.html>

Why are there two? God only knows.

If you want to do the impossible, don't hire an expert because he knows it can't be done.

-- Henry Ford

Subject: Re: Free source code diagramming programs
Posted by [Gary L. Scott](#) on Wed, 12 Apr 2006 14:55:27 GMT
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Edward Gregor wrote:

> slebetman@yahoo.com wrote:

>

>> idlwizard-1@yahoo.com wrote:

>>

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>>> available at

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>> syntax of more than 40 different languages including C/C++, Tcl,
>> Fortan, Forth, VB, Perl...
>>
>
> May I ask which editor you are using?

```

Most decent editors do most of this.

--

Gary Scott
mailto:garyscott@ev1.net

Fortran Library: <http://www.fortranlib.com>

Support the Original G95 Project: <http://www.g95.org>

-OR-

Support the GNU GFortran Project: <http://gcc.gnu.org/fortran/index.html>

Why are there two? God only knows.

If you want to do the impossible, don't hire an expert because he knows it can't be done.

-- Henry Ford

Subject: Re: Free source code diagramming programs
Posted by [Ben Pfaff](#) on Wed, 12 Apr 2006 15:52:57 GMT
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"mitch grunes" <idlwizard-1@yahoo.com> writes:

- > As to the Ben Pfaff, who preferred indentation, I do that on my own code.
- > It's good enough for short programs, if I make no mistakes.
- >
- > But the next time someone hands you a 20000 or so line legacy program
- > developed by 200 people over 30 years, that no one alive understands,
- > you may appreciate whatever help you can get. There is a lot of code
- > out there like that. The definition of a professional is that you do
- > what you are paid to do.

But wouldn't be better to run the code through a tool that can properly indent it, in that case? Then you can work on readable code, as opposed to just being able to refer to a version that is slightly easier to read.

--

"It would be a much better example of undefined behavior if the behavior were undefined."

--Michael Rubenstein

Subject: Re: Free source code diagramming programs
Posted by [Paul M. Dubuc](#) on Wed, 12 Apr 2006 17:03:31 GMT
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Ben Pfaff wrote:

- > But wouldn't be better to run the code through a tool that can
- > properly indent it, in that case? Then you can work on readable
- > code, as opposed to just being able to refer to a version that is
- > slightly easier to read.

<http://www.faqs.org/docs/Linux-HOWTO/C-C++Beautifier-HOWTO.html>

--

Paul M. Dubuc

Subject: Re: Free source code diagramming programs
Posted by [Ben Pfaff](#) on Wed, 12 Apr 2006 17:49:39 GMT
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"Paul M. Dubuc" <pdubuc@cas.org> writes:

> Ben Pfaff wrote:
>
>> But wouldn't be better to run the code through a tool that can
>> properly indent it, in that case? Then you can work on readable
>> code, as opposed to just being able to refer to a version that is
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>
> [http://www.faqs.org/docs/Linux-HOWTO/C-C++Beautifier-HOWTO.h tml](http://www.faqs.org/docs/Linux-HOWTO/C-C++Beautifier-HOWTO.html)

I don't think anyone has trouble finding a beautifier. If that's not all you meant to say, then perhaps you should be more explicit.

--

```
int main(void){char p[]="ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz.\n",*q="kl BlcNBFr.NKEzjwClxNJC";int i=sizeof p/2;char *strchr();int putchar(\n);while(*q){i+=strchr(p,*q++)-p;if(i>=(int)sizeof p)i-=sizeof p-1;putchar(p[i]\n);}return 0;}
```

Subject: Re: Free source code diagramming programs
Posted by [idlwizard-1@yahoo.com](#) on Thu, 13 Apr 2006 17:03:07 GMT
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> Well... my favourite text editor already does what your program do and
> does it live while I'm editing code...

Are you talking about the EMACS editor? I confess I'm not smart enough to learn it well, and when I tried it it did some things I didn't expect. I prefer simpler editors that only do predictable things. Perhaps it is because I never learned much LISP.

I do remember EMACS did something right - you could make it jump to the beginning or end of the current block - at least if you trust the code block structure to be correct. When you are fixing that struture in someone else's code, you don't want your text editor to be so "smart" it won't let you. (Taking again the example of debugging tens of thousands of lines of legacy code that doesn't quite work right.)

Pretty printers (auto-indentation, etc.) lose a lot of information, when you are trying to fix such, and tend to mess up comments, especially when the author carefully lined up the columns of his/her comments or code in some sort of table. So I leave the source code

intact, and create separate diagrams.

I've written a lot of operational code over the last 25 years that ran various places and was sometimes embedded in ship, air and space-borne platforms. Sometimes I've had to debug monsters. (Like the pretty lady said, professionals do what they are paid to do. Though, at the moment, I am between jobs.) I've found these tools useful. But every programmer has their own way of working. If you don't like mine, don't use it!

Subject: Re: Free source code diagramming programs
Posted by [Al Balmer](#) on Thu, 13 Apr 2006 17:27:37 GMT

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On 13 Apr 2006 10:03:07 -0700, "mitch grunes" <idlwizard-1@yahoo.com> wrote:

>> Well... my favourite text editor already does what your program do and
>> does it live while I'm editing code...
>
> Are you talking about the EMACS editor?

Many modern program editors do it. Most are easier to learn than emacs <g>.

> I confess I'm not smart enough
> to learn it well, and when I tried it it did some things I didn't
> expect. I prefer simpler editors that only do predictable things.
> Perhaps it is because I never learned much LISP.
>
> I do remember EMACS did something right - you could make it jump to the
> beginning or end of the current block - at least if you trust the code
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> thousands of lines of legacy code that doesn't quite work right.)
>
> Pretty printers (auto-indentation, etc.) lose a lot of information,
> when you are trying to fix such,

Could you elaborate on this? What information is lost by reformatting?

> and tend to mess up comments,
> especially when the author carefully lined up the columns of his/her
> comments or code in some sort of table.

That can happen, but some (most?) reformatters can be told to leave comments alone.

> So I leave the source code
> intact, and create separate diagrams.
>
> I've written a lot of operational code over the last 25 years that ran
> various places and was sometimes embedded in ship, air and space-borne
> platforms. Sometimes I've had to debug monsters. (Like the pretty lady
> said, professionals do what they are paid to do.

As a professional, I've often considered it my duty to educate those
who tell me what to do ;-)

> Though, at the moment,
> I am between jobs.) I've found these tools useful. But every programmer
> has their own way of working. If you don't like mine, don't use it!

--

Al Balmer
Sun City, AZ

Subject: Re: Free source code diagramming programs
Posted by [James Kuyper](#) on Thu, 13 Apr 2006 17:47:28 GMT
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Gary L. Scott wrote:

> Edward Gregor wrote:

>

>> slebetman@yahoo.com wrote:

...

>>> Well... my favourite text editor already does what your program do and
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>>> that's OK, that's what "indent" is for. Oh and yes my editor supports
>>> syntax of more than 40 different languages including C/C++, Tcl,
>>> Fortan, Forth, VB, Perl...

>>>

>>

>> May I ask which editor you are using?

>

> Most decent editors do most of this.

I suppose that's true, for suitable definitions of "most" and "decent".
I've seen editors that do what you say, but they are not as commonplace
in my experience as they seem to be in yours. Would you care to
identify some editors that you consider decent?

Subject: Re: Free source code diagramming programs
Posted by idlwizard-1@yahoo.com on Fri, 14 Apr 2006 00:20:40 GMT
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> Pretty printers (auto-indentation, etc.) lose a lot of information...
> and tend to mess up comments,
> especially when the author carefully lined up the columns of his/her
> comments or code in some sort of table.

Could you elaborate on this? What information is lost by reformatting?

Here is an example from a FORTRAN calculator program, which will also
only line up right if you display in a fixed width font like Courier:

```
                                ! Problems
      if((a.eq.'/' .and. y.eq.0).or.      ! Divide by 0
        & (a.eq.'1/' .and. y.eq.0).or.    ! reciprocal of 0
        & (a.eq.'^' .and.(y.lt.0        ! Negatives to
negative power
        & .or.(x.eq.0.and.y.eq.0))) then ! Zero to zero power
```

If you only know IDL,

```
                                ; Problems
      if (a eq '/' and y eq 0) or $      ; Divide by 0
        (a eq '1/' and y eq 0) or $    ; reciprocal of 0
        (a eq '^' and (y lt 0 $        ; Negatives to
negative power
        or (x eq 0 and y eq 0)) then begin ; Zero to zero
power
```

If you only know C,

```
                                /* Problems */
      if((strcmp(a,'/')==0 && y==0) ||    /* Divide by 0 */
        (strcmp(a,'1/')==0 && y==0) ||    /* reciprocal of 0 */
        (strcmp(a,'^')==0 && (y==0        /* Negatives to negative
power */
        || (x==0 && y==0))) { /* Zero to zero power */
```

No pretty printer is gonna preserve that.

Subject: Re: Free source code diagramming programs
Posted by [Al Balmer](#) on Fri, 14 Apr 2006 00:43:26 GMT
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On 13 Apr 2006 17:20:40 -0700, "mitch grunes" <idlwizard-1@yahoo.com> wrote:

```
>> Pretty printers (auto-indentation, etc.) lose a lot of information...
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> power */
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>
>
> No pretty printer is gonna preserve that.
```

I wouldn't ask a pretty printer to format anything that won't compile.
Count your parentheses and braces. Check the definition of strcmp().

--
Al Balmer
Sun City, AZ

Subject: Re: Free source code diagramming programs
Posted by [idlwizard-1@yahoo.com](#) on Fri, 14 Apr 2006 14:40:59 GMT
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> I wouldn't ask a pretty printer to format anything that won't compile.
> Count your parentheses and braces. Check the definition of strcmp().

You win. My keyboard made minor errors.

The idea is still the same. When a programmer formats his/her code and/or comments carefully, pretty printers destroy it. Here is another example, FORTRAN only, in which you have a useful comment table that explains things (again, you need a fixed width font).

c	variable	Initial Value	Meaning	Permanence
c	-----	-----	-----	-----
	a	= 5	! Happiness quotient	Transitory
	b	= 17	! Unhappiness factor	Changeable
	garbage	= 3	! Time differential	Irrelevant
	silly	= 5.23	! Semantics	Who cares?
	example	= 18	! Meaningfulness	A lifetime
	ohmy	= 999	! Wizard of Oz	Forever

Again, a pretty printer will kill all this extremely useful information. If you casually apply a pretty printer to tens of thousands of lines of code, and that gets passed on to the next benighted programmer, you will lose something he/she will need to understand.

Enough.

Subject: Re: Free source code diagramming programs
Posted by [Al Balmer](#) on Fri, 14 Apr 2006 18:50:45 GMT
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On 14 Apr 2006 07:40:59 -0700, "mitch grunes" <idlwizard-1@yahoo.com> wrote:

>> I wouldn't ask a pretty printer to format anything that won't compile.
>> Count your parentheses and braces. Check the definition of strcmp().
>
> You win. My keyboard made minor errors.
>
> Darn cheap Chinese keyboards!

> The idea is still the same.

But remains to be demonstrated. In the example given, I could have corrected the code sufficiently that reformatting was possible (the unbalanced braces and parens) but you could legitimately claim that the result wasn't what you intended.

I did, in fact, balance the code and run the beautifier. It left the comments (which you seemed to be concerned about) in the same relative position, but the formatting of the last line depended on where I put the balancing parens.

> When a programmer formats his/her code
> and/or comments carefully, pretty printers destroy it. Here is another
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> explains things (again, you need a fixed width font).

```
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> c  variable    Initial Value  Meaning           Permanence
> c  -----
>   a      = 5      ! Happiness quotient Transitory
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>   silly   = 5.23   ! Semantics           Who cares?
>   example = 18     ! Meaningfulness     A lifetime
>   ohmy    = 999    ! Wizard of Oz       Forever
>
```

Unfortunately, I don't have a pretty-printer for FORTRAN, but I believe that indent would process this without destroying the layout. Perhaps someone else could try it.

> Again, a pretty printer will kill all this extremely useful
> information. If you casually apply a pretty printer to tens of
> thousands of lines of code, and that gets passed on to the next
> benighted programmer, you will lose something he/she will need to
> understand.

>
No, what will happen, in the usual case, is that the program will become much easier to read, and the maintenance programmer will take less time and make fewer mistakes.

Been there, done that. For over 30 years.

> Enough.

If you say so.

--

Al Balmer
Sun City, AZ
