

Obfuscated code

for fun
and profit

Stephen Sykes

Examples

?1*\$.=~/^(11+)\1+\$/|lp(\$.)while\$.+=1

WTF?

?1*\$.=~/^(11+)\1+\$/| |p(\$.)while\$.+=1

```
?1 * $. =~ /^(11+)\1+$/ ||  
p($.) while $. += 1
```

```
$ ruby -e '?1*$.=~/^(11+)\1+$/|lp($.)while$.+=1'
```

1

2

3

5

7

11

13

17

19

23

29

31

37

...

Maze generator

by Lars Christensen

```
#!/usr/bin/env ruby
x=(w=($*[0]||10).to_i)-1;y=(h=($*[1]||10).to_i)-1;T='|';v=[T
]*w*h; v[p=0]=F=(); f=[F]*w*y;g=[F]*h*x; (w*h-1) .times{n=[]
while T;n<<1 if p%w<x&&v[p+1];n<<-w if p>=w&&v[p-w];n<<-1 if
p%w>0&&v[p-1];n<<w if p<y*w&&v[p+w];if n.empty?;t=T;while t;
p+=1;t=v[p=p%(w*h)];end ;else;break;end;end;eval({1=>'g[p/x+
p%w', -1=>'g[p/w*x+(p-1)%w', w=>'f[p', -w=>'f[p-w'] } [np =n[(
n.length*rand).to_i]]+' ]=T' );v[p+=np]=F};S=' ' *3;R='+';c=(R+
U='- '*3)*w+R;puts c;h.times{|r|puts T+S+g[r*x,x].collect{|d|
d ? ' ':'|'}.join(S)+S+T;puts R+f[r*w,w].collect{|d|d ? S: U
}.join(R)+R if r!=y};puts c
```

Maze generator

```
$ ruby maze.rb
```

```
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
|
+   +-----+-----+-----+-----+-----+-----+-----+   +   +
|   |           |           |           |           |           |           |   |
+   +   +   +-----+   +   +   +   +   +   +   +   +   +
|   |   |   |   |           |   |   |   |   |   |   |   |   |   |
+   +-----+-----+-----+-----+   +   +-----+-----+   +
|   |           |           |           |           |           |           |   |
+   +   +-----+   +   +-----+   +   +-----+   +   +-----+
|   |   |           |   |   |           |   |   |           |   |   |
+   +-----+   +   +-----+   +   +-----+   +   +-----+   +
|   |           |           |           |           |           |           |   |
+   +   +-----+   +-----+   +-----+-----+   +   +
|   |           |           |           |           |           |           |   |
+   +-----+   +   +-----+-----+-----+   +-----+   +
|           |           |           |           |           |           |   |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
```

Another example

Interpreter for Mike Taylor's ETA language
Stack based, 8 instructions

dividE, Transfer, Address, Output, Input, Number, Subtract, Halibut

```
i=p,*$<;_,a,*s=1;scan(/\w/){q=#$&/i=~'htaoinse'and  
s<<eval(%w{,>0?(s.slice!~p):s[p-1] ,,,=0||(break~_=c), _ ,utc~~,  
STDIN.getc||-1 a=0 ,,-c ,,,;s<<p/c;p%c ,*7+q a=,}[a ?8+q/7:q].gsub(',',''  
c=p;p=s.pop;p' )})while$_=i[~-_+=1]
```

223 chars

Shorter

Ruby becoming less 'compression friendly'

```
i=p,*$<;_,a=1;scan(/\w/){i<<eval(%w{,>0?(i.slice!~p):i[p-1]
,,=0||(break~_=c),_,utc~~,
getc||-1 a=0 ,,-c ,;i<<p/c;p%c ,*7+Q a=,}[a ?8+Q/7:Q].gsub','','
c=p;p=i.pop;p')if Q=#$/i=~'htaoinse'}while$_=i[~--_+=1]
```

211 chars

Ruby 1.9.2

```
$ ruby eta.rb < tictac.eta  
eta.rb:1:in `': undefined method `scan' for main:Object  
(NoMethodError)
```

In C

- Surely the greatest
- And with a historical contest - IOCCC since 1984
- IOCCC has 2k limit + 2k whitespace
- <http://www.ioccc.org>

Fabrice Bellard

<http://bellard.org>

- FFMPEG
- QEMU
- QEmacs
- TCC
- OTCC
- JSLinux

OTCC

- 3301 chars
- C subset eg. only signed integer ('int') variables and functions can be declared.
- But can compile itself
- Staggering achievement

OTCC

```
#include <stdio.h>
#define k *(int*)
#define a if(
#define c ad()
#define i else
#define p while(
#define x *(char*)
#define b ==
#define V =calloc(1,99999)
#define f ()
#define J return
#define l ae(
#define n e)
#define u d!=
#define F int
#define y (j)
#define r m=
#define t +4
F d,z,C,h,P,K,ac,q,G,v,Q,R,D,L,W,M;
E(n{
x D++=e;
}
o f{
a L){
h=x L++;
a h b 2){
L=0;
h=W;
}
}
i h=fgetc(Q);
}
X f{
J isalnum(h)|h b 95;

...

```

Don Yang

<http://uguu.org/sources.html>



Yume (2004-03-25)

uniq utility.

Synopsis

```
yume [OPTION] [INPUT [OUTPUT]]
```

Description

Discard all duplicate lines from INPUT (or stdin), writing the remaining lines to OUTPUT (or stdout). Ordering of the original input is preserved. If "-" is used for INPUT, stdin is used. "-" can not be used for OUTPUT.

-i Ignore case (default: case sensitive).
-c Include number of occurrences with output (default: no).

-h N Set history size to N lines (default: infinite).

To emulate original uniq behavior, use "-h 1".

If N is negative, only the first -N lines are kept in history. For example, to filter out contents of ignore.txt from input.txt:

```
cat ignore.txt input.txt | \  
./yume -h -`wc -l < ignore.txt` | \  
tail -`wc -l < ignore.txt`
```

-l expr Set expression for left marker (default: start of line).

-r expr Set expression for right marker (default: end of line).

Expressions are character based strings, executed after the initial (default) expressions. See marker expressions section below.

-f N Skip first N fields.

Equivalent to "-l ^S(sS)M -r \$", where M = N - 1.

"-f 0" is the same as "-f 1".

IOCCC winner

```
char*d=")35E!'1cA,,!'2kE`*!-s@d(!(k(f//g&! )f.e5'f(!+a+)f%2g*! ?f5f,!=f-*e/!<d"
"6e1!9e0'f3!6f)-g"          "5!4d*b+e6!0f%k)d7!+~^'c7!)z/d-+!'n%a0(d5!""%c1a+/d4"
"!2)c9e2!9b;e1!8b"          ">e/!7cAd-!5fAe+!7fBe(!8hBd&! :iAd$![7S,Q"      "0!1bF7"
"!1b?'_6!1c,8b4!2"          "b*a,*d3!2n4f2!${4f.'!%y4e5!&f%d-^-d7!4"      "c+b)"
"d9!4c-a'd:!/i('`"          "&d;!+l'a+d<! )l*b(d=! 'm-a&d>!&d'`0_&c"      "?!"
"$dAc@!$cBc@!$b<^"          ""          "&d$`:$d9_&l++^$!%f3"      "a'n"
"1_"          ""          "$!&f/c(o/_%!(f+c)q*c%"      "!*f&d"
"+f$"          ""          "s&!-n,d)n(!0i-c-k)!3d/"      "b0h*!H`"
"7a,!["          ""          "7X0[!4cM,!4cK`*!4cJc(!4cHg&!4"      "c$j8f'!&~"
"]9e)!'"          ""          "|:d+!)""rAc-!*m*:d/!4c(b4e0!1r"      "2e2!/t0e4!-"
"y-c6!+|,c6!)f$b("          "h*c6"          "!(d'b(i)d5!(b*a'"      "`&c)c5!'b+`&"
"b'c)c4!&b-_$c"          ""          "'d*c3!&a.h'd+d"      "1!%a/g'ete0!%b"
"-g(d.d/!&c*"          ""          "h'd1d-!(d%g)"      "d4d+!*1,d7d)!,h-"
"d;c'!.b0c"          ""          ">d%!A`Dc$"      "![7*i]5471[=ohr&o*"
"t*q*`*d"          ""          "**v*r;027"      "*~=h./}tcrsth&t:r9"
"b].,b"          ""          "-725"          "-.t--/"      "/#r[<t8-752793?<.~"
";b]."          "t--"          "+r/#"          "537-r"      "[/9~X.v90<6/<.v;-#
"52/="          "{kgoh."          "/}q"          ";u"          "vtohr"      "`.*$engt$$,b;$/="
"t;v"          ";6=`it."          "`;"          "7=`"          ":",b-7"      "25=/o`..d;b]`--[
"/+"          "55/}o`.d:"          ""          "-?5"          "/}o`.'"      "v/i]q--[;52=`it"
".o"          ";53-.v96<7"          ""          "/=o"          ":d=o--/"      "i]q--[;h./=i]"
"q"          "--[;v9h./<-"          ""          "52="          "{cjuc&`"      "it.o;?4=o:d="
"o"          "--/i]q--[ "          ""          ";54="          "{cjuc&i]q-"      "-[;76=i]q[;"
"6="          "vsru.i"          ""          "/={ "          "=),BihY_gha,)"      "" ,o[3217];
int i,          r,w          ,f,b,p,          t=641,x;n(){return          r<t?d[*
d+143+(r          ++)%t]:r>          +1341?59:(x=d[(r++-t)          %351+t]
)?x^(p?6:0          ): (p+=34);}          main(){w=sprintf(o,"char"          "*d="
);r=p=0;for(          f=1;f<*d+143;)          if((b=d[f++])-33){if(b<+93){          if(
!p)o[w++]=34;for(i=35+(p?0:1);i          <b;i++)o[w++]=n();o[w++]=p?n():+34          ;}
else for(i=92;i<b;i++)o[w++]=32;}else o[w++]=10;o[w]=0;puts(o);};/*Don_Yang*/;
```


Saitou (2000-02-28)

Mutually-reproducing program.

This is my second IOCCC 2000 entry, winner of the Best Layout category.

No executable is provided with this package, you can't fully appreciate this program unless you have a gcc compatible compiler. If you don't, sample output is included in output/ directory.

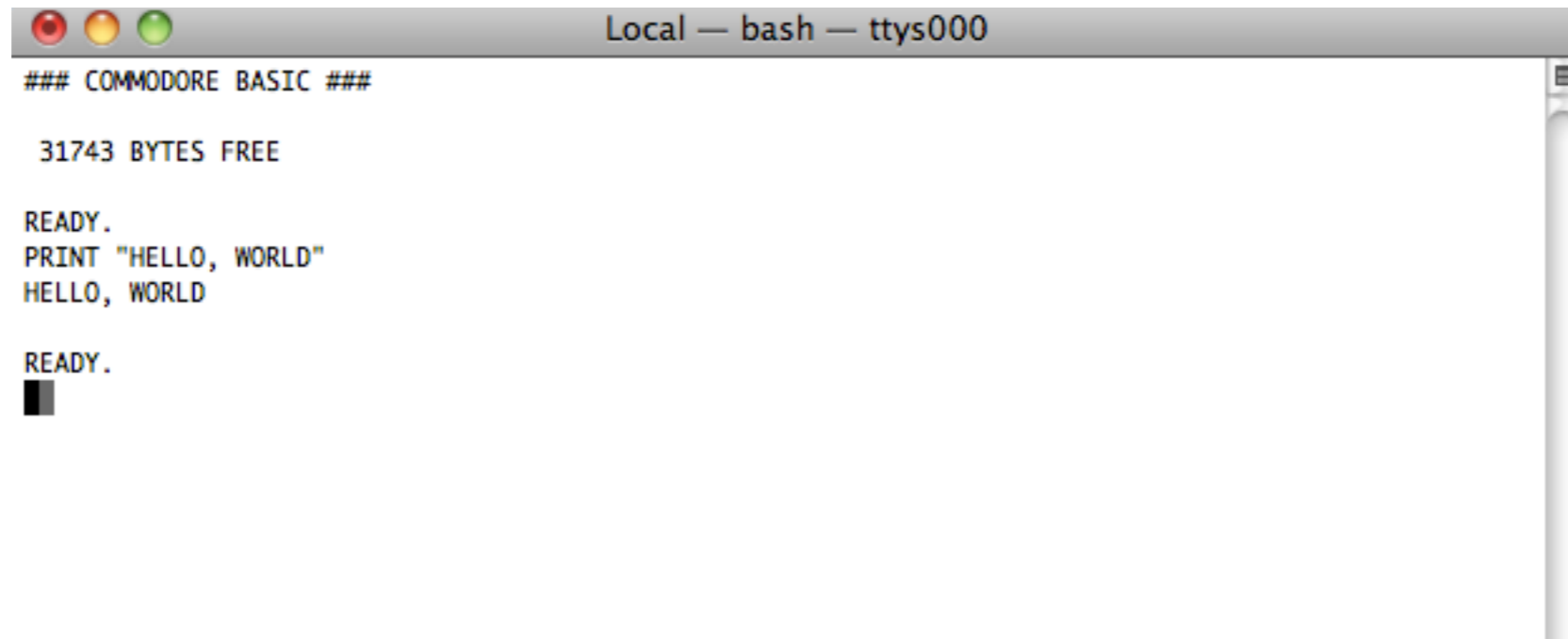
Creating this kind of program is quite a mess, not all files in the source/ directory may be useful. Go figure it out yourself. The judges took too long to judge the entries (over 7 months), I no longer remember how I wrote the program :P

Template based on Saitou Hajime from Rurouni Kenshin.

PET emulator

- Near complete 6502 emulator
- Emulates PET hardware - screen, keyboard, tape drive
- Needs PET ROM to function
- 3451 chars
- http://www.stephensykes.com/blog_perm.html?112

Running a PET

A terminal window with a title bar that reads "Local — bash — ttys000". The window contains the following text:

```
### COMMODORE BASIC ###  
  
31743 BYTES FREE  
  
READY.  
PRINT "HELLO, WORLD"  
HELLO, WORLD  
  
READY.  
█
```

Other languages

- Postscript contest
- Ruby contest IORCC (2005)
- Perl golf
- Python contest
- VIM golf (<http://vimgolf.com>)
 - eg: `:%s#</.*##|%s/<\(.*\)>/%\1 /|%s/ *$//|%v/\S/d<CR><CR>ZZ`

The Strange Ruby Quiz

```
z = ->(z){true if z==3..z==5}
=> #<Proc:0x000001028051f8@(irb):9 (lambda)>
z === 2
=> nil
z === 3
=> true
z === 4
=> true
z === 2
=> true
z === 5
=> true
z === 2
=> nil
```

```
x if x = true
```

```
(irb):16: warning: found = in conditional, should be ==
```

```
NameError: undefined local variable or method `x' for main:Object
```

```
from (irb):16
```

```
from /Users/sds/.rvm/rubies/ruby-1.9.2-p180/bin/irb:17:in `'
```

```
y = true unless defined? foobar
```

```
=> true
```

```
w = true unless defined? w
```

```
=> nil
```

```
w
```

```
=> nil
```

```
[0.0, 1/0.0].sort
```

```
=> [0.0, Infinity]
```

```
[0.0, 0/0.0].sort
```

```
ArgumentError: comparison of Float with Float failed
```

```
from (irb):26:in `sort'
```

```
from (irb):26
```

```
from /Users/sds/.rvm/rubies/ruby-1.9.2-p180/bin/irb:17:in `'
```

My absolute favourite

Herrmann2 (2001)

An autostereogram/3D generator, the source is an autostereogram/3D itself

```
char*d,A[9876];char*d,A[9876];char*d,A[9876];char*d,A[9876];char*d,A[9876];char
e;b;*ad,a,c; te;b;*ad,a,c; te;*ad,a,c; w,te;*ad,a, w,te;*ad,ad, w,te;*ad,
r,T; wri; ;*h; r,T; wri; ;*h; r; wri; ;*h;_, r; wri;*h;_, r; wri;*har;_, r; wri
;on; ;l ;i(V) ;on; ;l ;i(V) ;o ;l ;mai(V) ;o ;mai(n,V) ;main (n,V)
{-!har ; {-!har ; {har =A; {h =A;ad =A;read
(0,&e,o|n -- +(0,&e,o|n -- +(0,&o|n ,o-- +(0,&on ,o-4,- +(0,n ,o-=94,- +(0,n
,l=b=8,! ( te-*A,l=b=8,! ( te-*A,l=b,! ( time-*A,l=b, time)|-*A,l= time(0)|-*A,l=
~1),srand (l),~1),srand (l),~1),and ,(l),~1),a ,(A,l),~1) ,(d=A,l),~1)
,b))&&+(A + te,b))&&+(A + te,b))+((A -A+ te,b))+A -A+ (&te,b+A -A+(* (&te,b+A
)=+ +95>e?(*& c)=+ +95>e?(*& c) +95>e?(*& _*c) +95>(*& _*c) +95>(*&r= _*c) +95>
5,r+e-r +_:2-195,r+e-r +_:2-195+e-r +_:2-1<-95+e-r +_-1<-95+e-r ++?_-1<-95+e-r
|(d==d),!n ?*d|| (d==d),!n ?*d|| (d==d),!n ?*d|| (d==d),!n ?*d|| (d==d),!n ?*d|| (d=
*( (char**) +V+ *( (char) +V+ *( (c),har) +V+ (c),har) + (V+ (c),r) + (V+ ( c),
+0,*d-7 ) -r+8)+0,*d-7 -r+8)+0,*d-c:7 -r+80,*d-c:7 -r+7:80,*d-7 -r+7:80,*d+-7
+7+! r: and%9- +7+! rand%9-85 +7+! rand%95 +7+!! rand%95 +7+ rand()%95 +7+ r
-(r+o):( +w,_ + A-(r+o)+w,_+*( A-(r+o)+w,_ + A-(r+o)+w,_ + A-(r+o)+wri,_ + A-(r+o)
+(o)+b),!write+(o)+b,!wri,(te+(o)+b,!write+(o=_) +b,!write+(o)+b,!((write+(o)+b
-b+*h)(1,A+b,!-b+*h),A+b,(!!-b+*h),A+b,!-b+(*h),A+b,!-b+*h),A-++b,!-b+*h)
, a >T^1,( o-95, a >T,( o-=+95, a >T,( o-95, a )) >T,( o-95, a >T,(w? o-95, a >T
++ &&r:b<<2+a ++ &&b<<2+a+w ++ &&b<<2+w ++ ) &&b<<2+w ++ &&b<<((2+w ++ &&
!main(n*n,V) , !main(n,V) , !main(+n,V) ,main(+n,V) ) ,main(n,V) ) ,main),(n,
l)),w= +T-->o +l)),w= +T>o +l)),w=o+ +T>o +l,w=o+ +T>o;{ +l,w=o+T>o;{ +l,w &=o+
!a;}return _+= !a;}return _+= !a;}return _+= !a;}return _+= !a;}return _+= !a;}
```