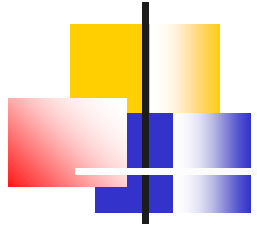




**jeforth 6.23**

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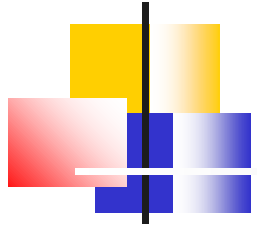
**Silicon Valley  
Forth Interest Group  
Chen-Hanson Ting  
April 24, 2021**



# History of FORTH

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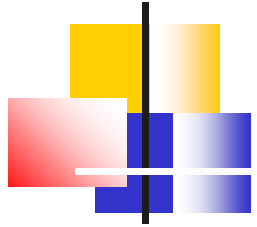
- **Chuck Moore, 1968**
- **Forth, Inc. 1973**
- **Forth Interest group, 1978**
- **F83, 1985**
- **F-PC, 1990**
- **eForth, 1992**
- **Win32Forth, 1995**



# Forth, Inc

---

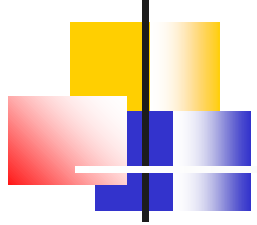
- **A Forth for every computer**
  - **IBM 1130**
  - **PDP-11**
  - **Nova**
  - **microForth**
  - **polyForth**
  - **SwiftForth**



# **Forth Interest Group**

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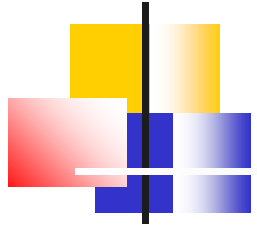
- **A Forth for every microprocessor**
  - **PDP-11**
  - **8080, 8086**
  - **68000**
  - **6502**
  - **1802**
  - **9900**
  - **Alpha Micro**



# F83

---

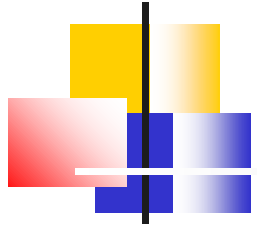
- **A Forth for every personal computer**
  - **8080**
  - **8086**
  - **68000**
  - **68000 CPM**



# F-PC

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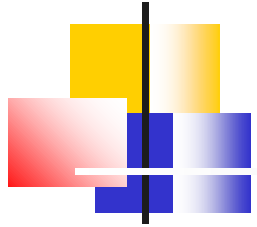
- **A Forth for IBM PC**
  - **Win32Forth**
  - **gForth**



# eForth

---

- **A Forth for every microcontroller**
  - **8051, 8080, 80x86**
  - **6800,6805,68000**
  - **6502, Apple II**
  - **TI MSP430 LaunchPad**
  - **STM8S, STM32-F4**
  - **Arduino ATmega328P**
  - **ESP8266, ESP32**
  - **jeforth**

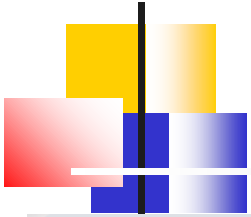


# Jeforth 6.23

---

- **Fixed bugs in array commands.**
- **Turnkey system**
- **Explore GUI**
  - **Mandelbrot set**
  - **DTMF dial tones**
  - **Interactive Globe**
  - **Karaoke**





# Jeforth623 Bootup

Browser tabs: taylor polynomial - Google Search, jeforth6.23, jeforth6.23

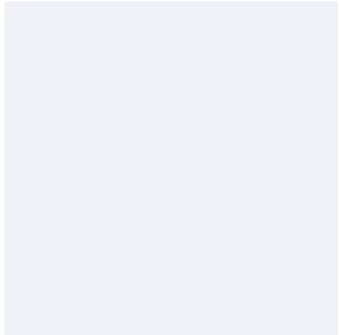
Address bar: File | C:/F%23/jeforth/ting623/jeforth623.html

Navigation icons: back, forward, refresh, home, search, star, print, share, user profile, menu

Taskbar: Apps, Google, Index to Texts & Tr..., YouTube - Broadca..., 大纪元新闻网 - 海..., 首页-中国天气网, 长江水文网, Reading list



jeforth 6.23



```
: test ." FORTH is the answer." cr ."
Now," cr ." What's the problem?" ;
yellow clear black test
```

# Boot up Demo

taylor polynomial - Google Search x jeforth6.23 x +

File | C:/F%23/jeforth/ting623/jeforth623.html

Apps Google bow Index to Texts & Tr... YouTube - Broadca... 大纪元新闻网 - 海... 首页-中国天气网 长江水文网 Reading list



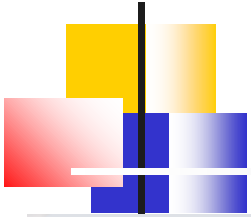
FORTH is the answer.

Now,

What's the problem?

```
jeforth 6.23
: test ." FORTH is the answer." cr ." Now," cr ."
What's the problem?" ; yellow clear black test
```

< >ok



# Haiku.txt 623

taylor polynomial - Google Search x jeforth6.23 x jeforth6.23 x +

File | C:/F%23/jeforth/ting623/jeforth623.html

Apps Google bow Index to Texts & Tr... YouTube - Broadca... 大纪元新闻网 - 海... 首页-中国天气网 长江水文网

Reading list



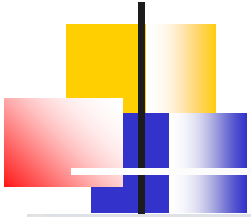
FORTH is the answer.  
Now,  
What's the problem?

```
jeforth 6.23
: test ." FORTH is the answer." cr ." Now," cr ."
What's the problem?" ; yellow clear black test

< >ok
```

```
or
  x 66 / sin 0.5 > and y 66 / sin 0.5
> and
  255 *
  dup ;
' switzerland is proto haiku

( mandelbrot set )
: z+ rot + >r + r> ;
: z* 3 pick 2 pick * 3 pick 2 pick * -
>r
>r * swap r> * + r> swap ;
: coloring ( n -- r g b )
  dup 1 and 255 *
  swap dup 2 and 127 *
  swap 4 and 63 * ;
: z^2 2dup z* ;
: len dup * swap dup * + ;
: layer
  push push push z^2
  pop pop 2dup push push z+
  2dup len 4 <
  pop pop rot pop + ;
: mandel
  0 0 x 100 - 50 / y 100 - 50 / 0
  layer layer layer layer layer layer
layer layer
  push drop drop drop drop pop coloring
;
' mandel is proto haiku
```

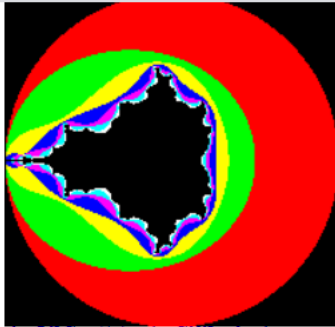


# Mandelbrot Set

taylor polynomial - Google Search x jeforth6.23 x jeforth6.23 x +

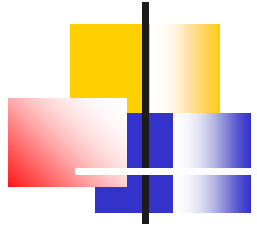
File | C:/F%23/jeforth/ting623/jeforth623.html

Apps Google bow Index to Texts & Tr... YouTube - Broadca... 大纪元新闻网 - 海... 首页-中国天气网 长江水文网 » Reading list



```
0.5 > and y oo / sin 0.5 > and 255 * dup ;  
switzerland is proto haiku ( mandelbrot set ) :  
z+ rot + >r + r> ; : z* 3 pick 2 pick * 3 pick 2  
pick * - >r >r * swap r> * + r> swap ; : coloring  
( n -- r g b ) dup 1 and 255 * swap dup 2 and 127  
* swap 4 and 63 * ; : z^2 2dup z* ; : len dup *  
swap dup * + ; : layer push push push z^2 pop pop  
2dup push push z+ 2dup len 4 < pop pop rot pop +  
; : mandel 0 0 x 100 - 50 / y 100 - 50 / 0 layer  
layer layer layer layer layer layer push  
drop drop drop drop pop coloring ; ' mandel is  
proto haiku
```

< 0 >ok



# Chinese Word Game

---

clear

yellow

dice dice dice dice



# Chinese Word Game

taylor polynomial - Google Search x jeforth6.23 x jeforth6.23 x +

File | C:/F%23/jeforth/ting623/jeforth623.html ☆ S G

Apps Google Index to Texts & Tr... YouTube - Broadca... 大纪元新闻网 - 海... 首页-中国天气网 长江水文网 » Reading list

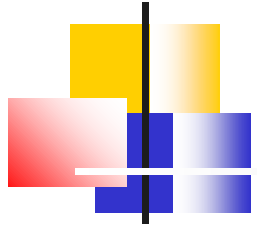


少婦閨閣讀書  
寒士市井睡覺  
公子茅舍睡覺  
妓女閨閣睡覺

```
zdup pusrn pusrn z+ zdup ien 4 < pop pop rot pop +  
; : mandel 0 0 x 100 - 50 / y 100 - 50 / 0 layer  
layer layer layer layer layer layer layer push  
drop drop drop drop pop coloring ; ' mandel is  
proto haiku
```

```
< 0 >ok  
clear < 0 >ok  
yellow < 0 >ok  
dice dice dice dice
```

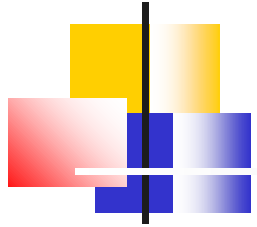
```
< 0 >ok
```



# DTMF

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- **Dual Tone MultiFrequency dial tones**
- **Trivial application when jeforth has 6 tone generators.**

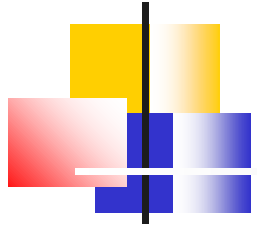


# Conclusions

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- **HTML5/JavaScript gives us the ideal environment for jeforth.**
- **jeforth is a Forth platform of zero cost since PC is ubiquitous.**
- **We can explore Graphic User Interface freely.**
- **jeforth captures the essence of Forth.**





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**Thank You!**