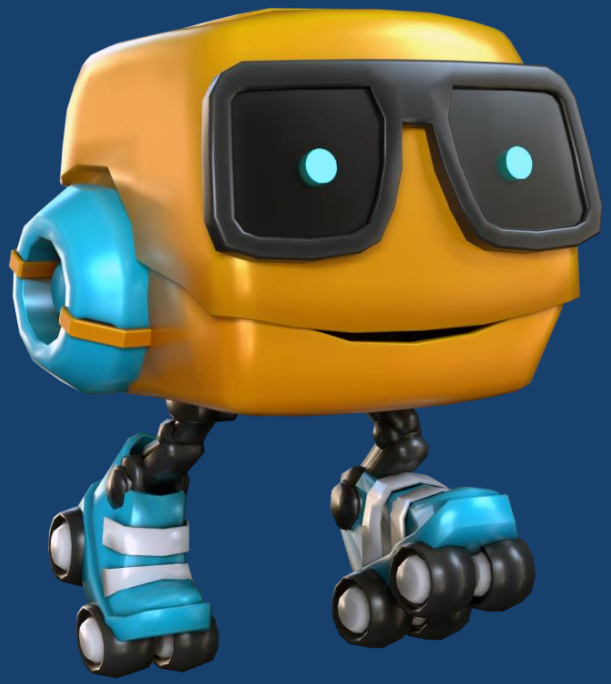
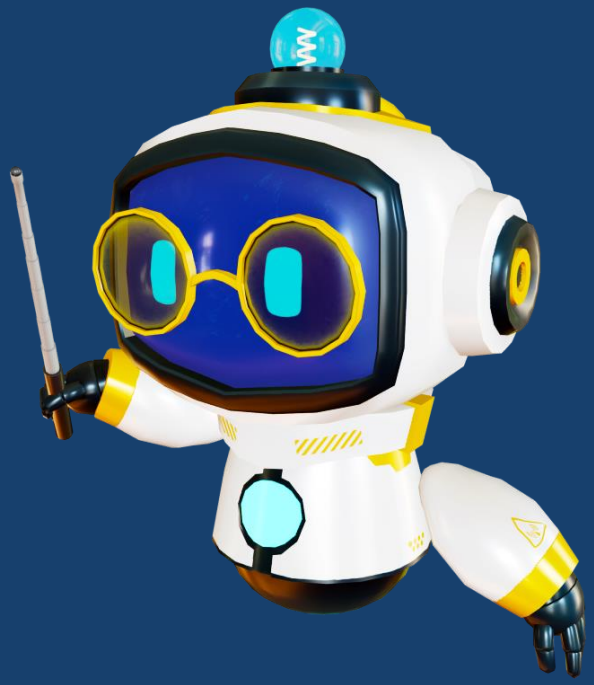
CHIPWITS





Terug naar de jaren '80: De Reconstructie van ChipWits in FORTH

FORTH

Uw Gids Door de Tijd: Jan Rochat's Reconstructie Project

MacFORTH Code for 1984 Robot-Coding Game 'ChipWits' from 1984 is Now Open Source (chipwits.com) 10

Posted by EditorDavid on Sunday November 24, 2024 @01:34PM from the sharing-the-software

Back in the mid-1980s Mark Roth was in 5th grade when the game ChipWits "helped kindle his interest in coding," according to an online biography. ("By middle school, he wrote his first Commodore 64 assembler and by high school he authored a 3D Graphics library for DOS.")

And 40 years later, Slashdot reader markroth8 writes that the programming puzzle/logic game "inspired many people to become professional coders":

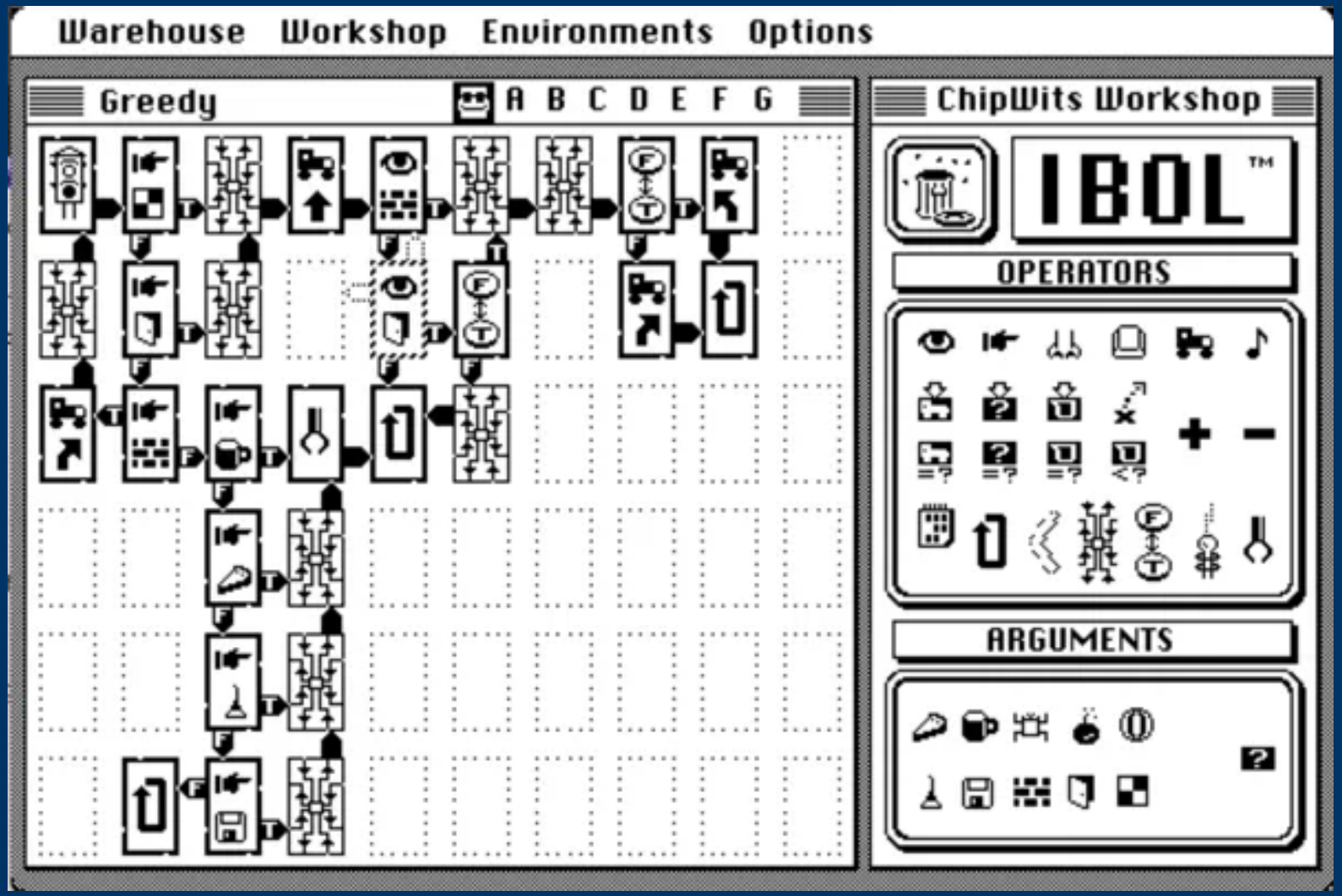
> ChipWits was first released for Mac in 1984, and was later ported to Commodore 64 and Apple II in 1985. To celebrate the game's **40th anniversary**, the team behind the new Steam reboot of ChipWits (including its original co-creator Doug Sharp, also of fame for the game King of Chicago) is announcing the recovery and open source release of the original game's source code, written in the FORTH programming language, for both Mac and Commodore 64 platforms.
>
> Recovering data from 40-year old 5.25" and 3.5" disks was a challenge in and of itself, and most of the data survived unscathed! It's interesting to read the 40-year-old code, and compare it to modern game development.

"Our goal for open sourcing the original version of ChipWits is to ensure its legacy lives on," according to the announcement. (It adds that "We also wanted to share an appreciation for what cross-platform software development for 8-bit microcomputers was like in 1984.")

Waarom het Verleden Opgraven?

Terug naar 198(4) : ChipWits

Terug naar 198(4) : De Magie van IBOL



FORTH hoezo : Drie Platformen

Mac

Commodore 64

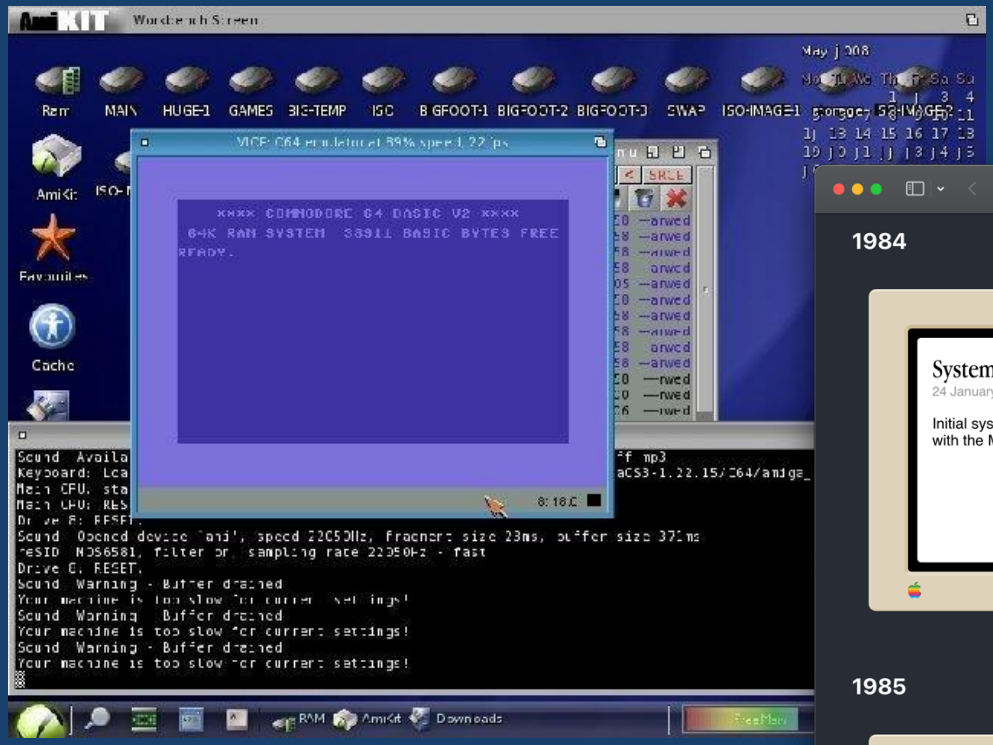
Apple II

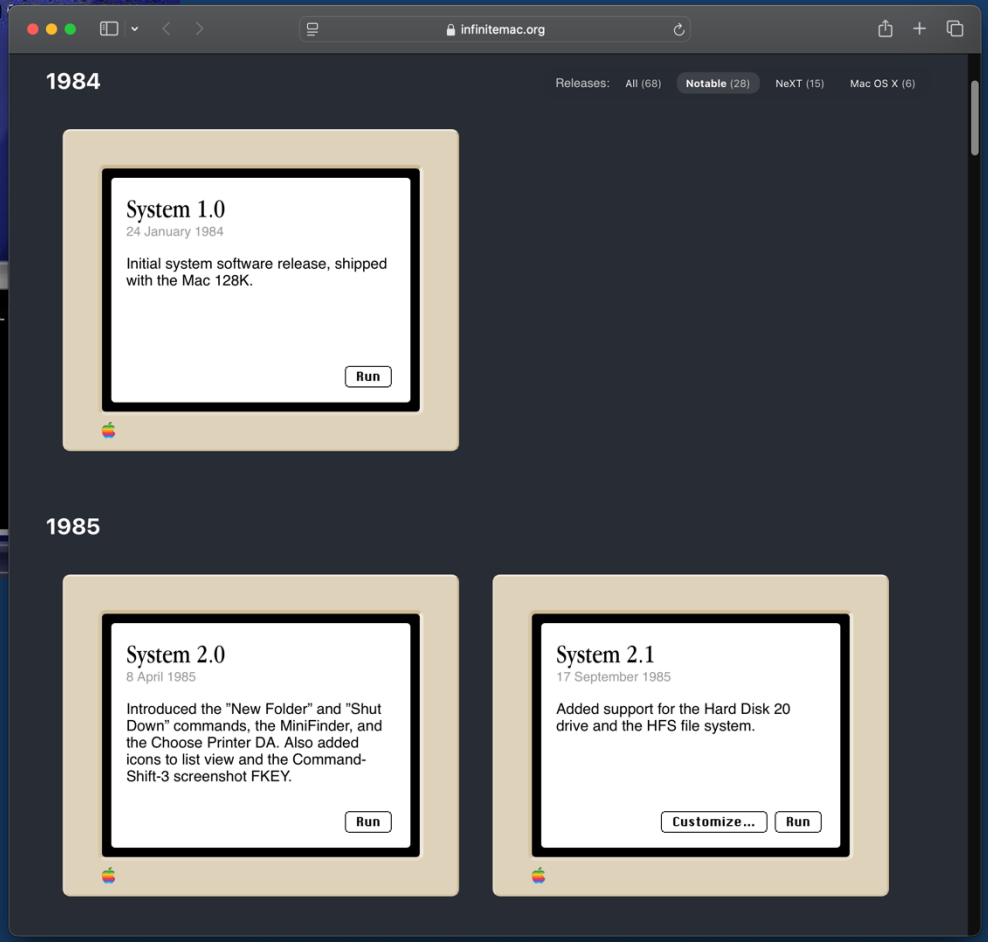
FORTH hoezo : Apple Lisa

FORTH hoezo : Need for speed

Lets Go : of toch nog niet

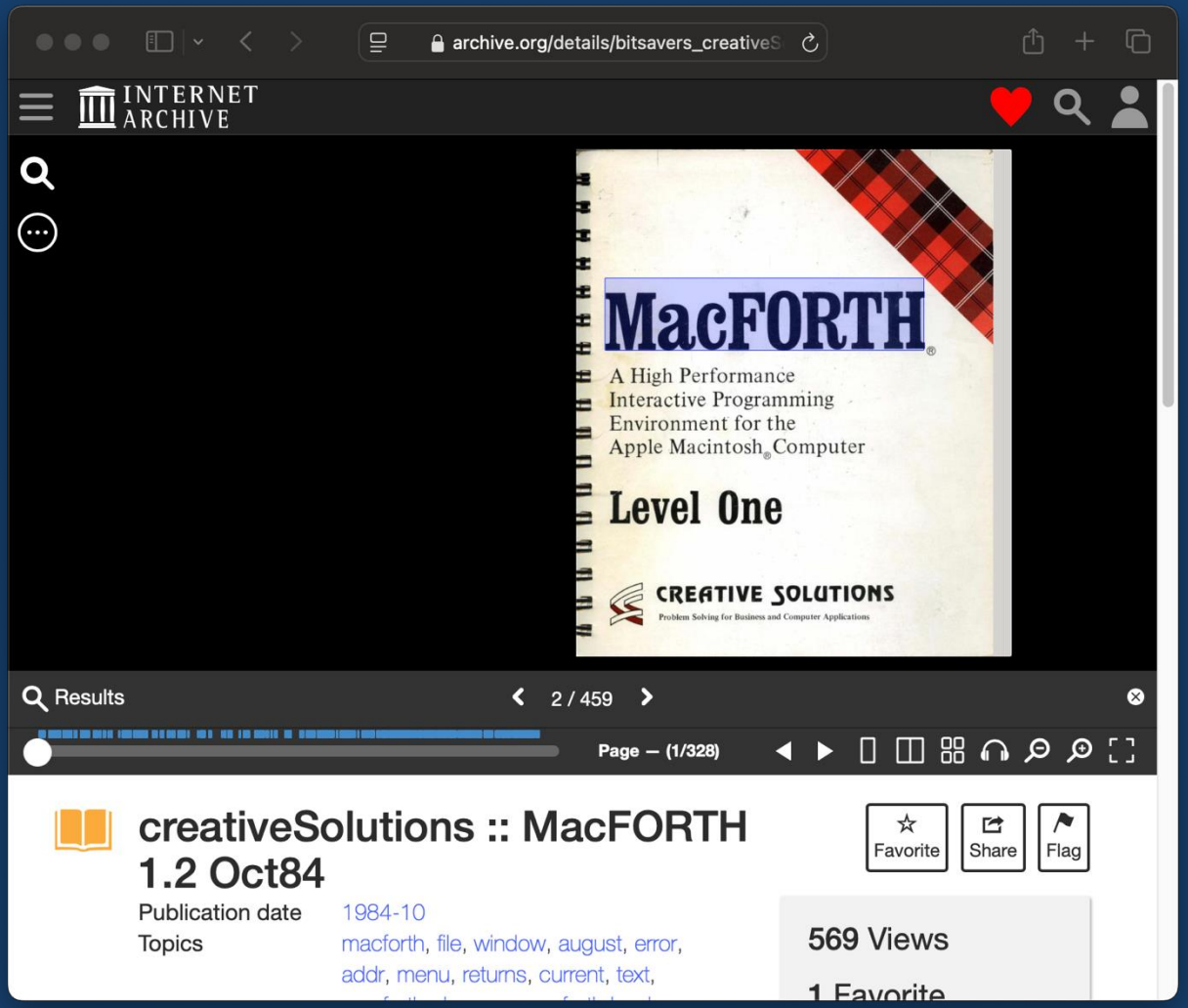
Emulating the 80th





Lets Go : nog even niet

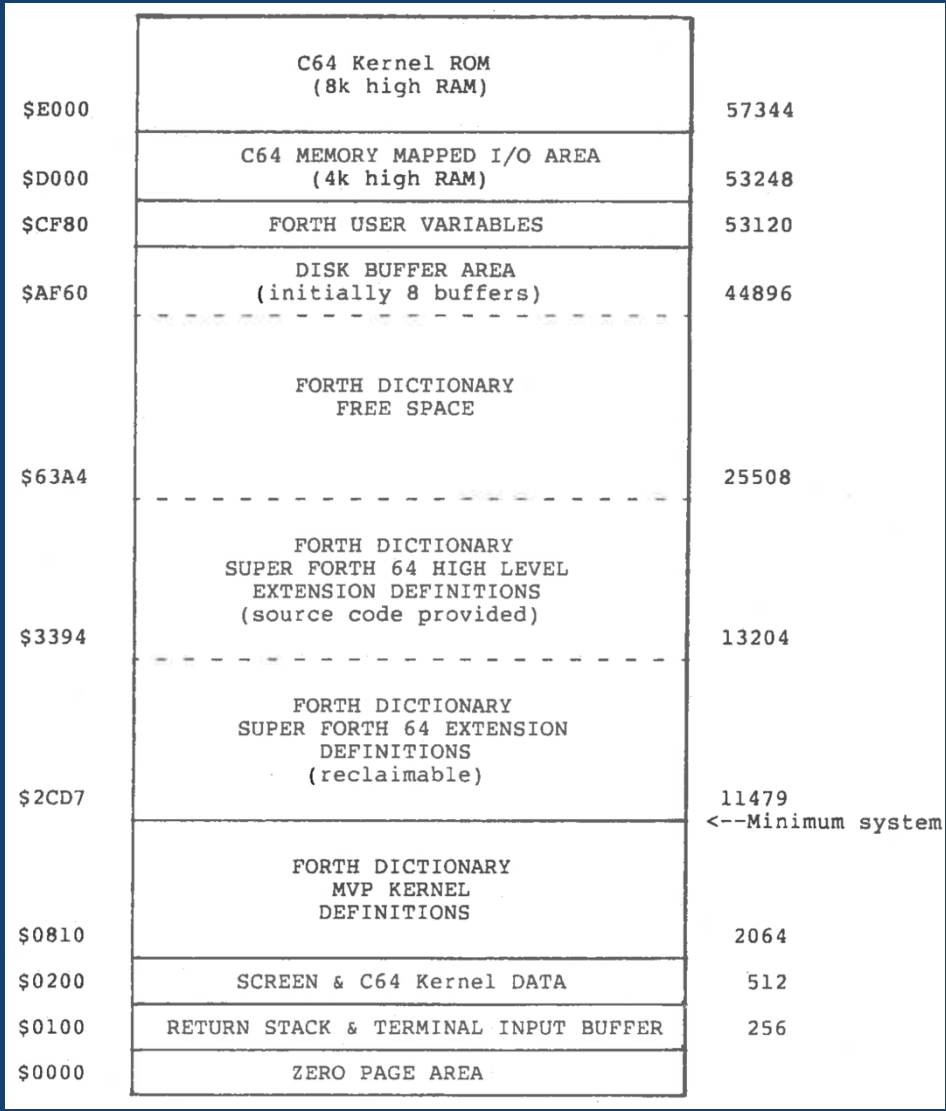
Studeren: Naar de zolder



Studeren: Naar de zolder

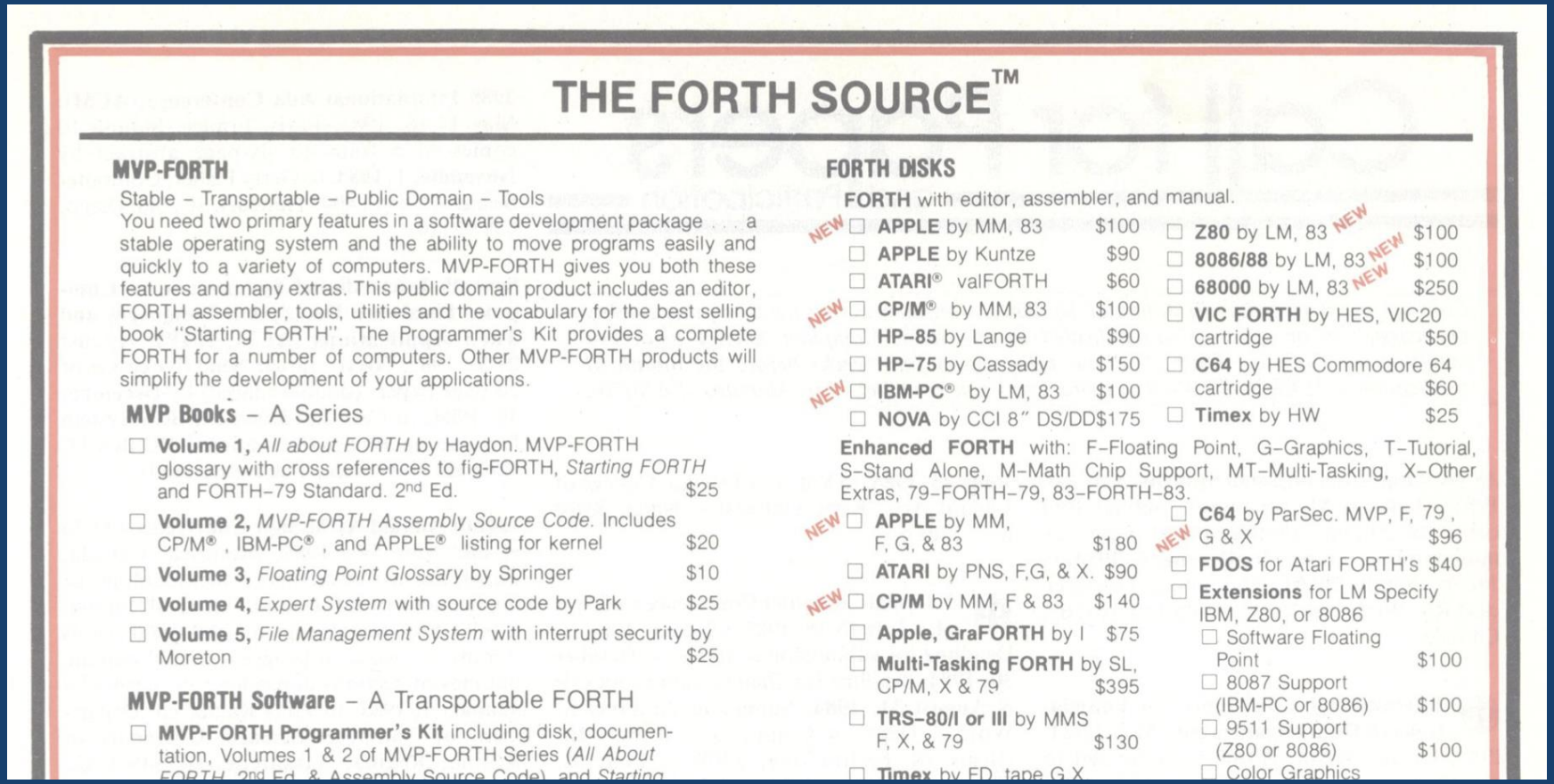
Bron : https://forth.hcc.nl/categorie-overzicht/producten/vijgeblad

Studeren: MVP-FORTH



Bron : SUPERFORTH 64 Manual, Parsec Research

Studeren: MVP-FORTH



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MVP-FORTH

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MVP Books – A Series

- ☐ **Volume 1,** *All about FORTH* by Haydon. MVP-FORTH glossary with cross references to fig-FORTH, *Starting FORTH* and FORTH–79 Standard. 2nd Ed. $25
- ☐ **Volume 2,** *MVP-FORTH Assembly Source Code.* Includes CP/M®, IBM-PC®, and APPLE® listing for kernel $20
- ☐ **Volume 3,** *Floating Point Glossary* by Springer $10
- ☐ **Volume 4,** *Expert System* with source code by Park $25
- ☐ **Volume 5,** *File Management System* with interrupt security by Moreton $25

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- ☐ **HP–85** by Lange $90
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- NEW ☐ **IBM-PC®** by LM, 83 $100
- ☐ **NOVA** by CCI 8″ DS/DD $175
- ☐ **Z80** by LM, 83 NEW $100
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  - ☐ 9511 Support (Z80 or 8086) $100
  - ☐ Color Graphics

Studeren: MVP-FORTH

Levels of Forth

Glen B. Haydon

Level 0 About 45 basic Forth functions
Omitted storage words, display words

Level 1 fig-Forth Installation Manual
Full set of Forth functions
Limited documentation

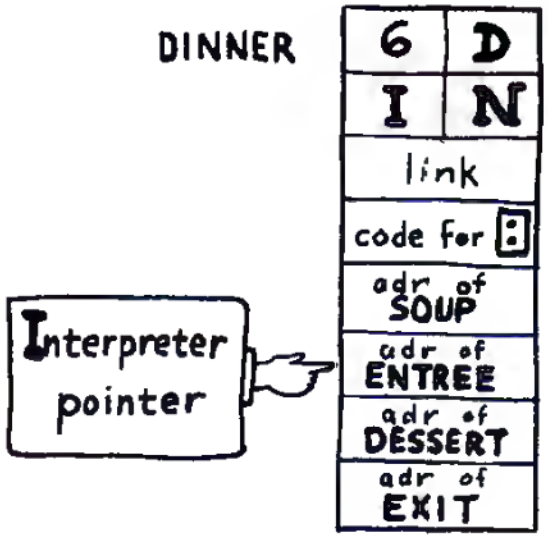
Level 2 Forth-79 Standard Leo Brodie: *Starting Forth"*
Mountain View Press slight modifications
Added features
Included ads and editor

Studeren: MVP-FORTH

```
: DINNER   SOUP ENTREE DESSERT ;
```

and that tonight's ENTREE consists simply of

```
: ENTREE   CHICKEN RICE ;
```



We are executing DINNER and we have just finished the SOUP. The pointer that is used by the address interpreter is called the "interpreter pointer" (I). Since the next course after SOUP is the ENTREE, our interpreter pointer is pointing to the cell that contains the address of ENTREE.

Bron : Starting FORTH, Leo Brodie, Forth Inc.

Studeren: MVP-FORTH

```
fig-FORTH for 6502, Rel 1.1   ......PAGE 0003


LINE # LOC     CODE        LINE

0065  0000                ;
0066  0000                ;     Boot up parameters.  This area provide jump vectors
0067  0000                ;     to bootup code, and parameters describing the system.
0068  0000                ;
0069  0000                       *=ORIG
0070  0200  EA            ENTER  NOP                  User cold entry point
0071  0201  4C 47 12             JMP COLD+2             vector to COLD entry
0072  0204  EA            REENTR NOP                ; User warm entry point
0073  0205  4C 57 12             JMP WARM               vector to WARM entry
0074  0208  04 00                .WORD $0004          6502 encoded in radix-36
0075  020A  D2 5E                .WORD $5ED2
0076  020C  64 1A                .WORD NTOP          Name address of MON
0077  020E  7F 00                .WORD $7F            Backspace character
0078  0210  80 3F                .WORD UAREA         Initial user area
0079  0212  9E 00                .WORD TOS            Initial top of stack
0080  0214  FF 01                .WORD $1FF           Initial top of return stack
0081  0216  00 01                .WORD TIBX           Initial terminal input buffer
```

Bron : FORTH interest group

Lets Go : bijna

Lets Go : bijna

game

```
32ff: A9 32 85 05 A5 7C 85 81 A5 7D 85 82 A6 7E A0 00  .2...|...}...~.
330f: 4C 80 00 6C 7A 00 86 49 2D 49 4E 49 D4 9D 32 20  L..lz..I-INI..2
331f: 33 84 7C 84 7D 78 AD 14 03 85 7A AD 15 03 85 7B  3.|.}x....z....
332f: A9 E9 8D 14 03 A9 32 8D 15 03 58 4C 90 08 86 49  ......2...XL...
333f: 2D 55 53 45 D2 15 33 48 33 84 7F 4C 90 08 88 49  -USE..3H3..L...
334f: 2D 53 59 53 54 45 CD 3D 33 5A 33 C8 4C 48 33 85  -SYSTE.=3Z3.LH3
335f: 49 2D 85 49 2D 53 45 D4 4D 33 B0 0D 9A 2E 60 0D  I-.I-SE.M3....`
336f: 52 0D 0F 22 7E 00 76 17 B0 17 0F 22 7C 00 32 09  R.."~.v...."|.2
337f: 58 33 B3 2E C3 1E 87 49 2D 43 4C 45 41 D2 61 33  X3.....I-CLEA.a
338f: B0 0D 49 0D C6 0C 69 33 C3 1E 84 54 48 52 D5 85  ..I...i3...THR.
339f: 33 B0 0D 30 0D 56 29 26 10 AC 20 70 2A AC 20 48  3..0.V)&.. p*. 
33af: 22 94 15 08 0D 04 00 75 21 01 12 EE FF C3 1E 82  ".......u!......
33bf: 53 D9 99 33 B0 0D 4B 2D 09 1C 09 1C C3 1E 86 53  S..3..K-.......S
33cf: 45 54 4C 46 D3 BE 33 B0 0D 0F 22 BA FF C3 33 C3  ETLF..3..."...3.
33df: 1E 86 53 45 54 4E 41 CD CD 33 B0 0D 27 1A 56 29  ..SETNA..3..'.V)
33ef: 00 2D 0F 22 BD FF C3 33 C3 1E 84 4F 50 45 CE E0  .-."...3...OPE..
33ff: 33 B0 0D E9 33 D6 33 0F 22 C0 FF 4D 20 C3 1E 85  3...3.3."..M ...
340f: 43 4C 4F 53 C5 F9 33 B0 0D C6 0C C6 0C 0F 22 C3  CLOS.3.......".
341f: FF C3 33 C3 1E 86 43 4C 52 43 48 CE 0E 34 B0 0D  ..3...CLRCH..4..
342f: 0F 22 CC FF 4D 20 C3 1E 82 4C D2 24 34 B0 0D E9  ."..M ...L.$4...
343f: 33 3E 14 0F 22 FF 00 4B 29 A2 15 61 25 E1 0C D6  3>.."..K)..a%...
```

Studeren: FIG-FORTH

```
fig-FORTH for 6502, Rel 1.1   ......PAGE 0003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Bron : FORTH interest group

Studeren: MVP-FORTH

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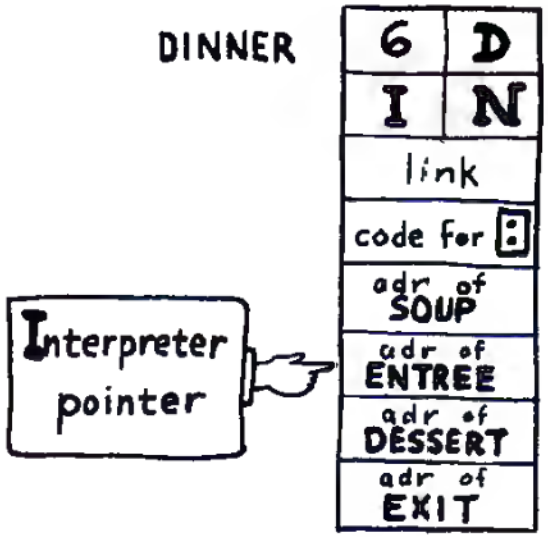

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Bron : Starting FORTH, Leo Brodie, Forth Inc.

game

```
50cf: 00 FF FF 00 00 FF FF 00 00 FF FF 00 00 FF FF 00  ................
50df: 00 FF FF 00 93 43 55 52 52 45 4E 54 2E 49 4E 53  .....CURRENT.INS
50ef: 54 52 55 43 54 49 4F CE B1 4D 05 1B 00 FF 8D 43  TRUCTIO..M.....C
50ff: 55 52 52 45 4E 54 2E 50 41 4E 45 CC E3 50 05 1B  URRENT.PANE..P..
510f: FF 00 81 CB FD 50 05 1B FF 00 88 46 55 45 4C 2E  .....P.....FUEL.
511f: 52 45 C7 11 51 05 1B 29 FF 89 52 41 4E 47 45 2E  RE..Q..)..RANGE.
512f: 52 45 C7 19 51 05 1B FF FF 8A 44 41 4D 41 47 45  RE..Q.....DAMAGE
513f: 2E 52 45 C7 28 51 05 1B FF 00 83 43 42 AB 38 51  .RE.(Q.....CB.8Q
514f: 05 1B 29 FF 8A 47 4F 2E 4D 41 52 4B 45 52 C0 49  ..)..GO.MARKER.I
515f: 51 BB 19 00 00 88 47 4F 54 4F 2E 47 4F C0 53 51  Q.....GOTO.GO.SQ
516f: BB 19 01 00 89 53 55 42 50 41 4E 45 4C C0 64 51  .....SUBPANEL.dQ
517f: BB 19 02 00 8A 42 4F 4F 4D 45 52 41 4E 47 C0 73  .....BOOMERANG.s
518f: 51 BB 19 03 00 85 57 49 52 45 C0 83 51 BB 19 04  Q.....WIRE..Q...
519f: 00 85 4D 4F 56 45 C0 94 51 BB 19 05 00 88 50 49  ..MOVE..Q.....PI
51af: 43 4B 2E 55 50 C0 A0 51 BB 19 06 00 85 51 52 41  CK.UP..Q.....QRA
51bf: 59 C0 AC 51 BB 19 07 00 85 53 49 4E 47 C0 BB 51  Y..Q.....SING..Q
51cf: BB 19 08 00 89 46 45 45 4C 2E 46 4F 52 C0 C7 51  .....FEEL.FOR..Q
51df: BB 19 09 00 89 4C 4F 4F 4B 2E 46 4F 52 C0 D3 51  .....LOOK.FOR..Q
51ef: BB 19 0A 00 86 53 4D 45 4C 4C C0 E3 51 BB 19 0B  .....SMELL..Q...
51ff: 00 85 43 4F 49 4E C0 F3 51 BB 19 0C 00 84 4B 45  ..COIN..Q.....KE
520f: 59 C0 00 52 BB 19 0D 00 83 4E 3D C0 0C 52 BB 19  Y..R.....N=..R..
```

cw.gm

```
50cf: 00 FF FF 00 00 FF FF 00 00 FF FF 00 00 FF FF 00  ................
50df: 00 FF FF 00 20 20 20 20 20 20 20 20 20 20 20 20  ....
50ef: 20 20 20 20 20 20 20 20 B1 4D 05 1B 00 FF 20 20          .M....
50ff: 20 20 20 20 20 20 20 20 20 20 20 20 E3 50 05 1B              .P..
510f: FF 00 20 20 FD 50 05 1B FF 00 20 20 20 20 20 20  ..  .P....
511f: 20 20 20 11 51 05 1B 29 FF 20 20 20 20 20 20 20     .Q..).
512f: 20 20 20 19 51 05 1B FF FF 20 20 20 20 20 20 20     .Q....
513f: 20 20 20 20 28 51 05 1B FF 00 20 20 20 20 38 51      (Q....    8Q
514f: 05 1B 29 FF 20 20 20 20 20 20 20 20 20 20 49 51  ..).
515f: 51 BB 19 00 00 20 20 20 20 20 20 20 20 20 53 51  Q....          SQ
516f: BB 19 01 00 20 20 20 20 20 20 20 20 20 20 64 51  ....          dQ
517f: BB 19 02 00 20 20 20 20 20 20 20 20 20 20 73 51  ....          sQ
518f: 51 BB 19 03 00 20 20 20 20 20 20 20 83 51 BB 19  Q....       .Q..
519f: 04 00 20 20 20 20 20 20 94 51 BB 19 05 00 20 20  .      .Q....
51af: 20 20 20 20 20 20 A0 51 BB 19 06 00 20 20 20 20        .Q....
51bf: 20 20 AC 51 BB 19 07 00 20 20 20 20 20 20 BB 51    .Q....      .Q
51cf: BB 19 08 00 20 20 20 20 20 20 20 20 20 20 C7 51  ....          .Q
51df: BB 19 09 00 20 20 20 20 20 20 20 20 20 20 D3 51  ....          .Q
51ef: BB 19 0A 00 20 20 20 20 20 20 20 20 E3 51 BB 19  ....        .Q..
51ff: 0B 00 20 20 20 20 20 20 F3 51 BB 19 0C 00 20 20  .      .Q....
520f: 20 20 00 52 BB 19 0D 00 20 20 20 20 0C 52 BB 19    .R....    .R..
```

Lets Go : bijna

```
18df: 20 20 20 53 55 50 45 52 2D 46 4F 52 54 48 20 36     SUPER-FORTH 6
18ef: 34 20 56 20 32 2E 31 20 0D 20 20 43 4F 50 59 52  4 V 2.1 .  COPYR
18ff: 49 47 48 54 20 31 39 38 34 20 42 59 20 45 4C 4C  IGHT 1984 BY ELL
190f: 49 4F 54 20 42 2E 20 53 43 48 4E 45 49 44 45 52  IOT B. SCHNEIDER
```

Super-Forth 64 V2.2R [1984]

Release Date :
1984

Type :
C64 Tool

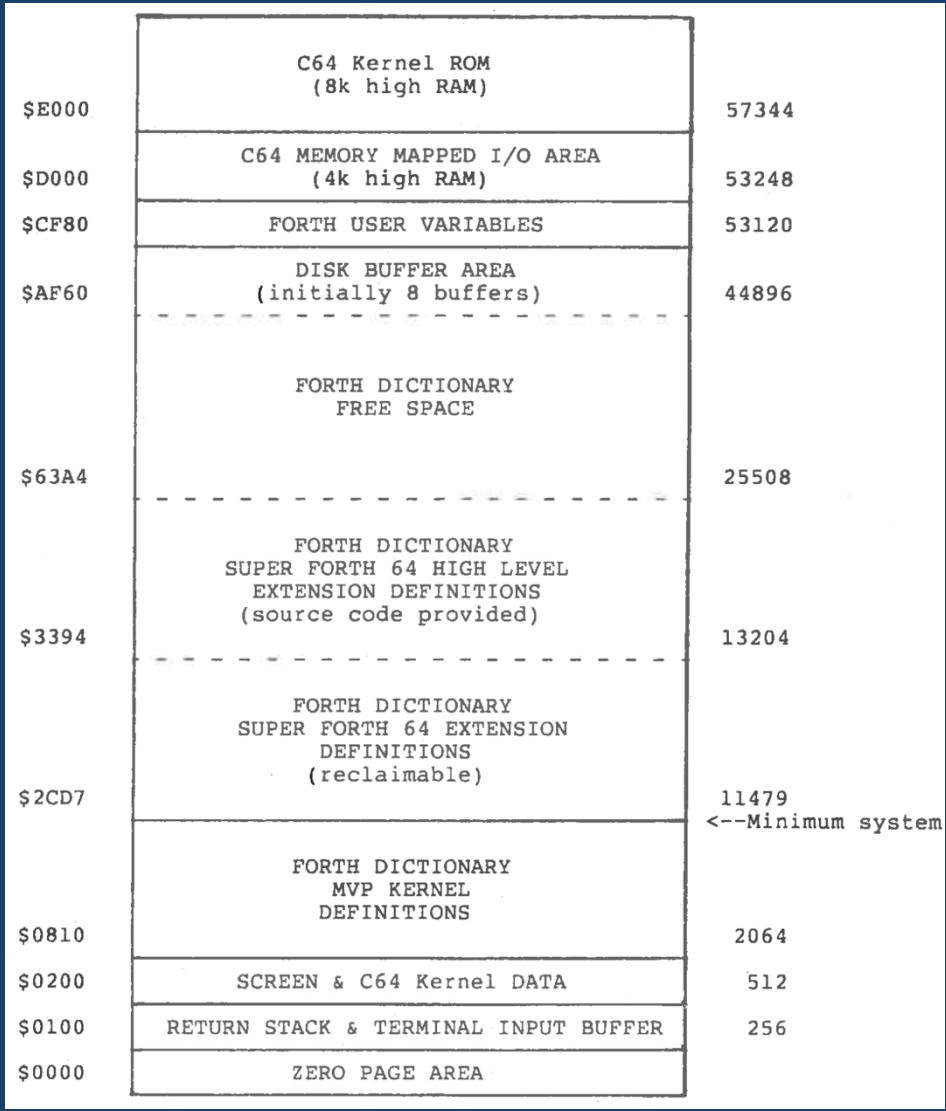
User rating: awaiting 8 votes (8 left)

Credits :
No credits found

Download :
http://csdb.dk/getinternalfile.php/191954/SuperForth22R.d64 (downloads: 110)

Look for downloads on external sites:
Pokefinder.org

Studeren: MVP-FORTH



Bron : SUPERFORTH 64 Manual, Parsec Research

```
Screen 245 ends here


 'CW',
 'SERIES',
 'END',
 'DIE',
 'S^',
 'INIT.CHIPWITS',
 'GAME',

Screen 242 starts here,
Screen 310 ends here

 'RADS'
```

```
                                                SCREEN 001
( CHIPWIT GAME LOADER)

( FORGET IT : IT ; ) FORTH
172 182  THRU  ( DATA & COMMON ROUTINES)
255 255 THRU ( DISK?)
183 195 THRU
246 254 THRU ( CHAR ROUTINES)
256 265 THRU ( IBOL GRAPHICS)
330 338 THRU ( STAT  NAMES)
266 275 THRU  ( DEBUG)
320 329 THRU  ( STACK,REG STUFF)
276 290 THRU  ( WORKSHOP)
" S0:CWLO" DOS SAVE-FORTH "CWLO"
EXIT  339 LOAD ( HI)
```

game

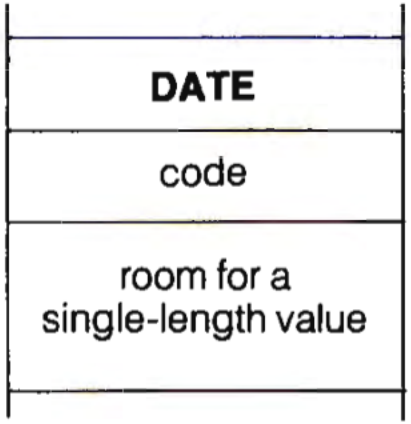
```
17cf: 2F 1F 32 09 A1 21 0F 22 1A 08 32 09 24 20 3F 18  /.2..!."..2.$ ?
17df: 86 43 48 41 52 49 CE B6 17 EA 17 86 83 AE FC 20  .CHARI.........
17ef: F0 03 20 C6 FF 20 CF FF 4C 19 0F 85 43 4C 45 41  .. .. ..L...CLEA
17ff: D2 DF 17 B0 0D 1A 24 A2 15 0C 0B E4 16 0F 22 00  ......$.......".
180f: 04 82 16 F4 1E FE 2A C3 1E 85 43 4D 4F 56 C5 FA  ......*...CMOV..
181f: 17 B0 0D B5 1D 27 0D DB 0D 08 0D 0A 00 09 1C AA  .....'..........
182f: 1D C6 16 04 00 EE 0F C3 1E 84 43 4F 4C C4 18 18  ..........COL...
183f: 41 18 A9 44 A2 18 A0 AC 4C 50 18 A9 0F A2 18 A0  A..D....LP......
184f: D0 85 87 84 04 86 05 A5 01 29 FE 85 01 A9 40 8D  .........)....@.
185f: F9 FF A9 FF A0 F9 8C FA FF 8D FB FF 8C FE FF 8D  ................
186f: FF FF A9 13 8D 02 03 A9 08 8D 03 03 A5 87 A8 AD  ................
187f: 1A 08 85 02 AD 1B 08 85 03 B9 16 08 91 02 88 10  ................
188f: F8 A9 0F 8D 21 D0 A9 0C 8D 20 D0 A9 00 8D FC 20  ....!.... ..... 
189f: 8D 44 24 D8 A9 6C 85 80 4C 1A 26 B0 0D E4 28 01  .D$..l..L.&...(.
18af: 1E 2D 1F 1A 2B 32 09 A1 21 0F 22 04 04 A3 0B C2  .-..+2..!."....
18bf: 24 32 09 59 1D 0B 21 A2 15 0F 22 17 20 32 09 32  $2.Y..!..". 2.2
18cf: 1C E4 28 70 24 60 0E 49 97 20 20 20 20 20 20 20  ..(p$`.I.       
18df: 20 20 20 53 55 50 45 52 2D 46 4F 52 54 48 20 36     SUPER-FORTH 6
18ef: 34 20 56 20 32 2E 31 20 0D 20 20 43 4F 50 59 52  4 V 2.1 .  COPYR
18ff: 49 47 48 54 20 31 39 38 34 20 42 59 20 45 4C 4C  IGHT 1984 BY ELL
190f: 49 4F 54 20 42 2E 20 53 43 48 4E 45 49 44 45 52  IOT B. SCHNEIDER
```

FORTH's Bereik: Toepassingen Buiten het Rijk van Spellen

As you know, the phrase

```
VARIABLE DATE
```

creates a definition which conceptually looks like this:



Bron : Starting FORTH, Leo Brodie, Forth Inc.

CHIPWITS

FROM EPYX

BY DOUG SHARP

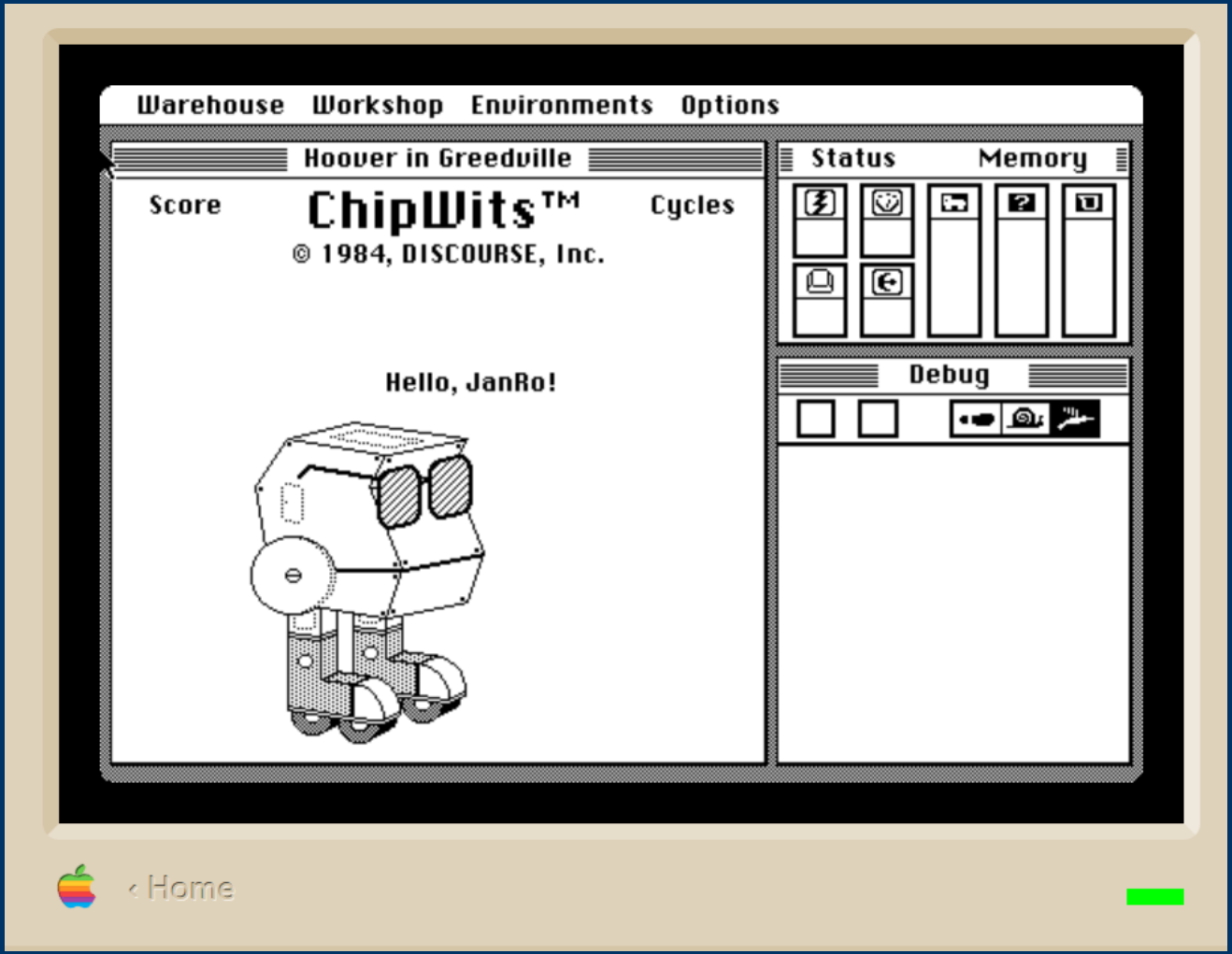
AND

MIKE JOHNSTON

De Puzzel Begint: Navigeren door een Zee van Broncode

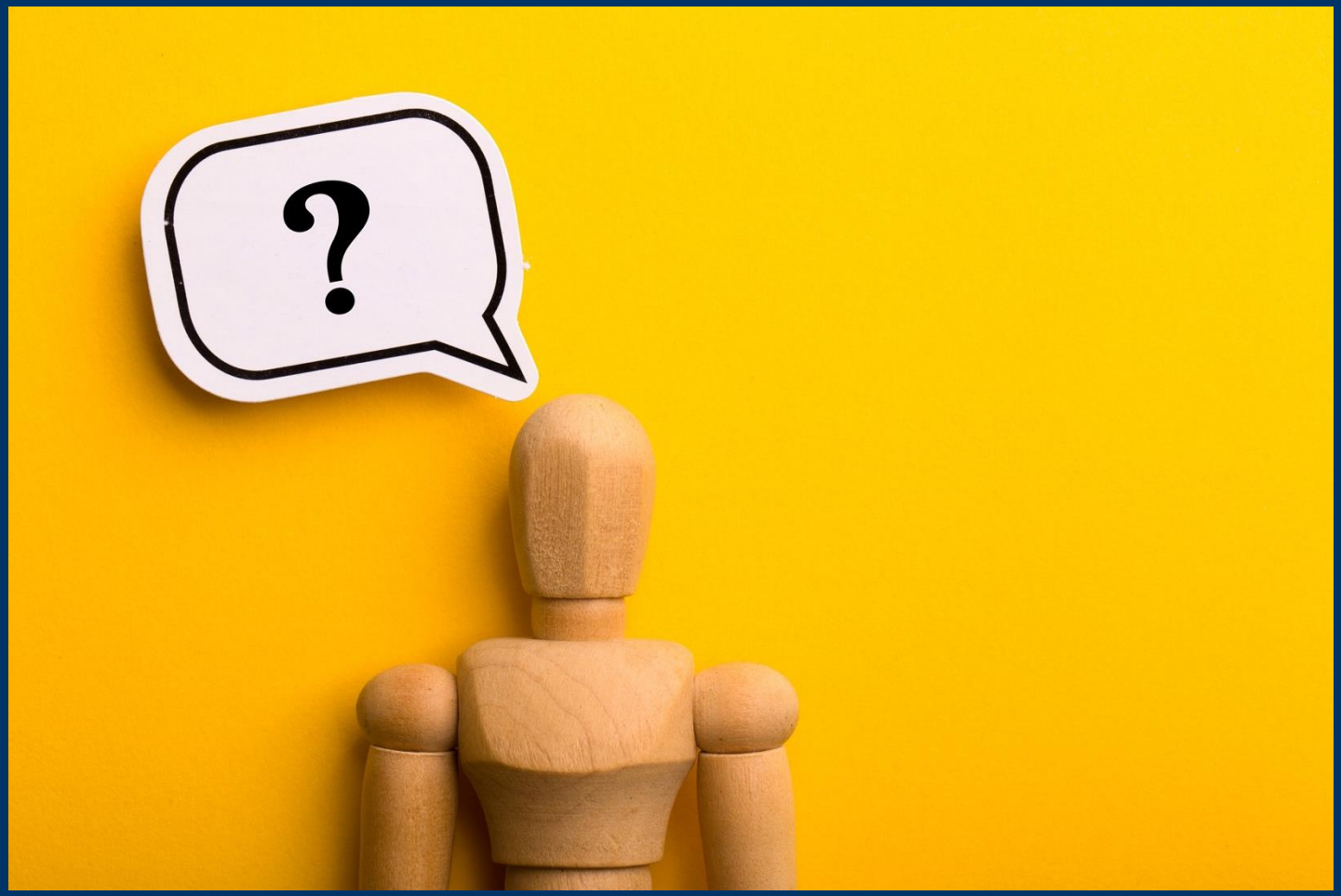
Diep Duiken: SuperForth 64 Begrijpen

Binnenin FORTH: Het Onderzoeken van WORDS en Geheugenorganisatie



De Code Kraken: Het Reconstrueren van de Compilatievolgorde

Vragen? Laten we Praten over ChipWits en FORTH!



Eureka! Het Ontdekken van de Ongrijpbare SuperForth 2.1

ChipWits.com
janro@chipwits.com