
How I won the Dyalog APL contest

Elsinore 2017

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How I worked on the problems

TryAPL



Mastering Dyalog



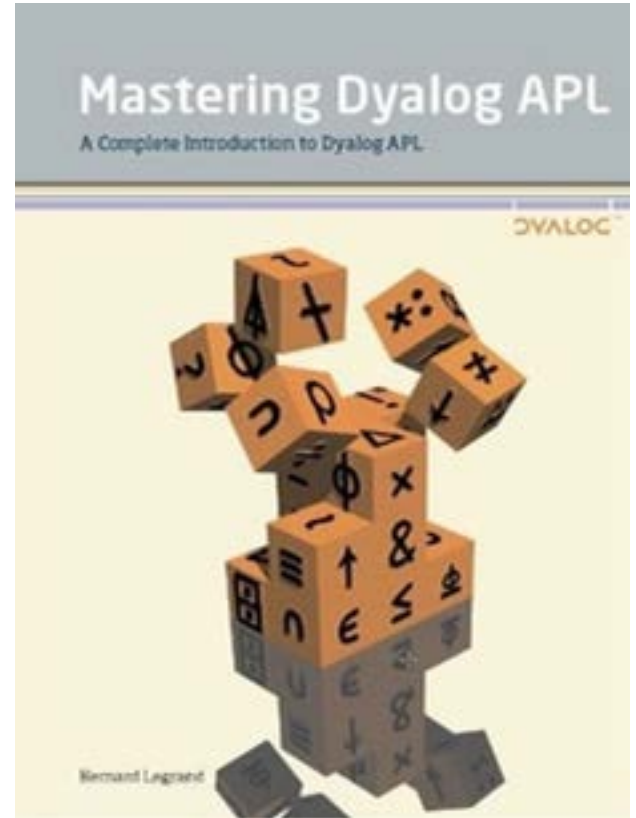
TryAPL

- Easy to start
- Easy to use
- Keyboard/Backtick
- Primitives list
- Persistent sessions



Mastering Dyalog APL

- Syntax
- Understanding
- Examples





TIO APL?

Didn't know.

Probably would have used it extensively.

It was an
enjoyable
experience.



Problem 3, Phase I

Remove text between (")s

```
{ ...} t ← 'this "is" a "test"'
```

```
This "" a ""
```

—

' "' = t

0 0 0 0 0 1 0 0 1 0 0 0 1 0 0 0 0 1
T h i s " i s " a " t e s t "

—

+ \ ' " ' = t

0 0 0 0 0 1 1 1 2 2 2 2 3 3 3 3 3 4

0 0 0 0 0 1 0 0 1 0 0 0 1 0 0 0 0 1

T h i s " i s " a " t e s t "

—

1-2| +\ ' "' = t

1 1 1 1 1 0 0 0 1 1 1 1 0 0 0 0 0 1

0 0 0 0 0 1 0 0 1 0 0 0 1 0 0 0 0 1

T h i s " i s " a " t e s t "

—

(1 0 1-2| +\) ' " ' = t

1 1 1 1 1 1 0 0 1 1 1 1 1 0 0 0 0 1

1 1 1 1 1 0 0 0 1 1 1 1 0 0 0 0 0 1

0 0 0 0 0 1 0 0 1 0 0 0 1 0 0 0 0 1

T h i s " i s " a " t e s t "

—

t/ä (┌ v 1-2|+\\) ' "' = t

This " " a " "

1 1 1 1 1 1 0 0 1 1 1 1 1 0 0 0 0 1

0 0 0 0 0 1 1 1 0 0 0 0 1 1 1 1 1 0

0 0 0 0 0 1 0 0 1 0 0 0 1 0 0 0 0 1

This " is " a " test "

—

How can we do
better using
Dyalog 14?

Healthcare, Phase II

— Number of patients

A taking drug A

B taking drug B

C taking drug C

r in remission

d that died

—

A

B

C

r

d

A

B

C

r

d

—

A

B

C

r

d

A

B

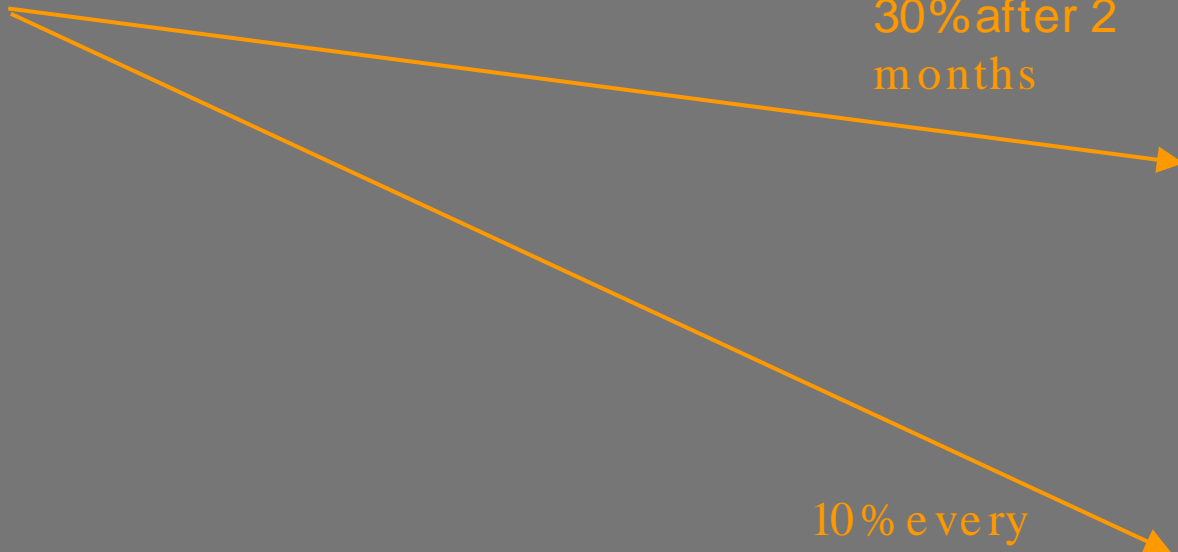
C

r

d

30% after 2 months

10% every month



—

A

B

C

r

d

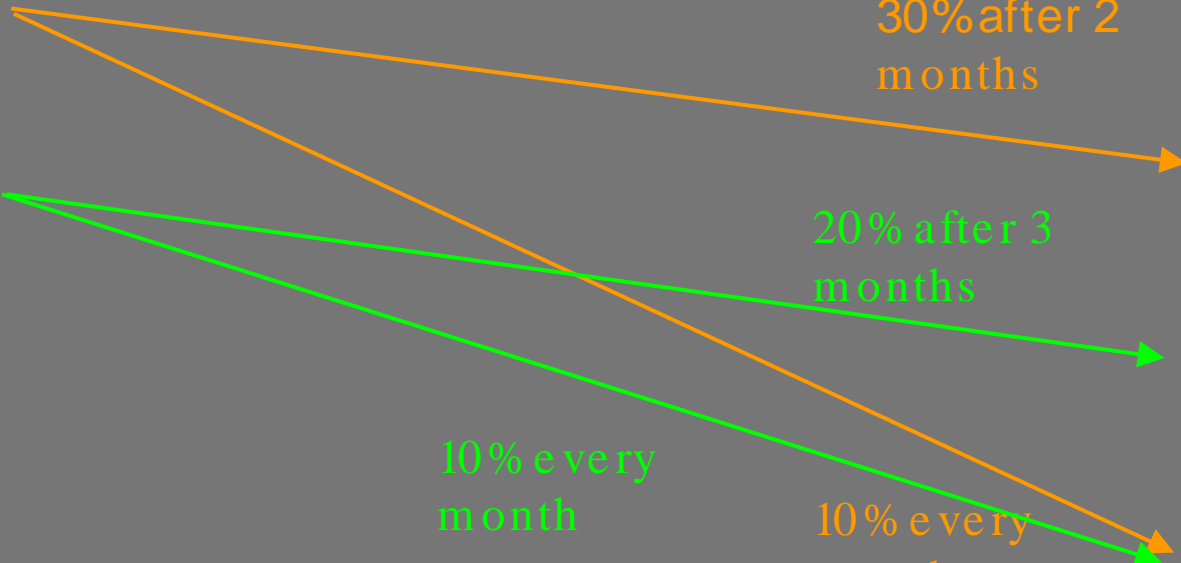
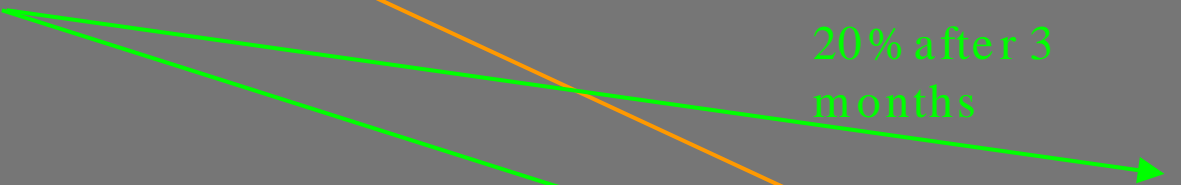
A

B

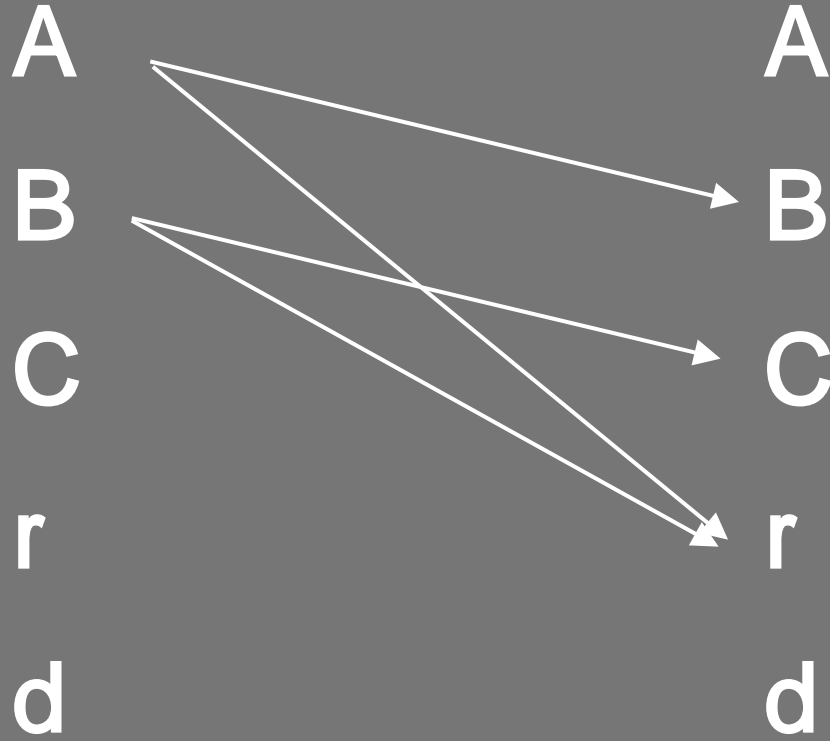
C

r

d



—



+

Random
mont hl y

Changes



X_{new}



Δ

(+.x)

X



Population

X



A

B

C

r

d

—

Δ ←

A	B	C	r	d	
0.7	0.3	0	0	0	A
0.3	0.3	0	0	0	B
0	0	0.2	0	0	C
0	0.4	0.7	0.9	0	r
0	0	0.1	0.1	1	d

Y ← Δ (+. ×) (★12) X

—

Δ ←

A1	A	B	C	r	d	
0	0	0.3	0	0	0	A1
0.9	0.6	0	0	0	0	A
0	0.3	0.3	0	0	0	B
0	0	0	0.2	0	0	C
0.1	0.1	0.4	0.8	1	0	r
0	0	0	0	0	1	d

$(\Delta (+ \cdot x) +) \neq \dots, n2, n1, X$

$\dots + \Delta (n2 + \Delta (n1 + X) \dots)$

—

$$Y \leftarrow (\Delta (+, \times) +) \neq n, cX$$

The logo for DIALOG, featuring the word in a stylized, outlined font. The letters are white with a thin orange outline. The background consists of three overlapping circles of varying shades of orange, creating a layered effect.

DIALOG

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