

DYALOG

Glasgow 2024

# Array Notation: A Journey of Discovery



John Daintree



# DYALOG

Glasgow 2024

## Array Notation (again)



John Daintree



2015 (Phil Last)

```
0 1(
{
  z+,c'first line'
  z+,c'second line'
  tz,c'third line'
})6 7
A
}
demo.dfn2 0
SYNTAX ERROR
dfn2[2] 0 1(
  ^
  +
  [cr'#.demo.create2'
create2+{
  ['first row of matrix'
  'second row of matrix'
  'third row of matrix']
A array notation
}
A Doesn't have to be brackets - many reasons why not|
```

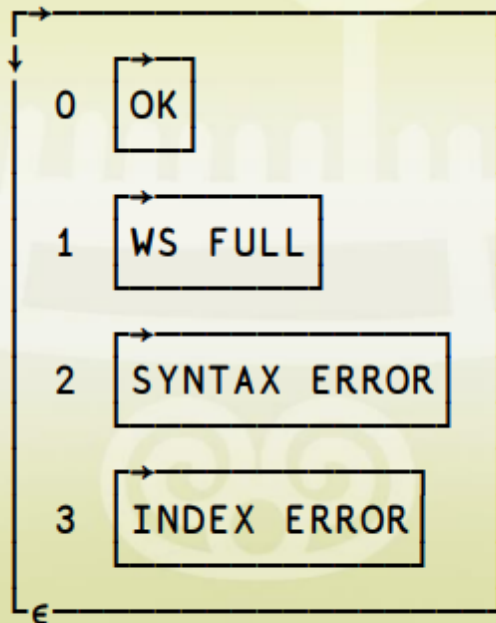
['first row of matrix'  
'second row of matrix'  
'third row of matrix']

2017 (Adam Brudzewsky)

# Nested table

## Current

```
e ← φ; 0 'OK'  
e; ← 1 'WS FULL'  
e; ← 2 'SYNTAX ERROR'  
e; ← 3 'INDEX ERROR'  
e; ← 4 'RANK ERROR'
```



## Proposed

```
e ← ( 0 'OK'  
      1 'WS FULL'  
      2 'SYNTAX ERROR'  
      3 'INDEX ERROR'  
      4 'RANK ERROR' )
```



# DYALOG

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## Array Notation (A retrospective)



John Daintree



2018 (Adam Brudzewsky)



## Mk III?



DYALOG

Glasgow 2024

# Array Notation: A Journey of Discovery



John Daintree



# Time to be a grown up



2024 (Me)

Today

Now

# We will NOT cover

```
vector←(1 2 3  
        4 5 6  
        7 8 9)
```

```
matrix←[1 2 3  
        4 5 6  
        7 8 9]
```

```
space←(a:1 2 3  
       b:4 5 6  
       c:7 8 9)
```

# Array Notation on the Wiki

[https://aplwiki.com/wiki/Array\\_notation](https://aplwiki.com/wiki/Array_notation)

# We will cover

- Array Notation as a serialized form
- Array Notation and code
- Array Notation and variables

It's all demo from here



# Demo 1

# We will cover

- ◆ Array Notation as a serialized form
  - ◆ Allows arrays (and namespaces) to be read from and saved to text files
    - ◆ Usually with no APL symbols
  - ◆ Restricted set of allowed primitives
    - ◆  $\neq$  (and a few others)
  - ◆ Using i-beam(s) for deserialization
  - ◆ And APL code for serialization

# We will cover

- ◆ Array Notation and code

## Demo 2

# We will cover

- ◆ Array Notation and code
  - ◆ No restrictions on functions allowed
  - ◆ Easy to edit
  - ◆ No conflict with other uses of ( and [
  - ◆ But...
    - ◆ There are some limits
    - ◆ D16: Interpreter Limits (Wednesday 11.55)

# We will cover

- ◆ Array Notation and variables

## Demo 3

# We will cover

- ◆ Array Notation and variables
  - ◆ Retirement of David Liebttag's Array Editor, because ...
  - ◆ Significant extensions to the Dyalog editor
  - ◆ Gloriously easy to edit many (most?) variables
  - ◆ Multiline array/namespace creation in the session



And finally  
(and *probably not* in 20.0)

## Demo 4

# A Journey of Discovery?

# In summary

- ◆ Array Notation as a serialized form
- ◆ Array Notation and code
- ◆ Array Notation and variables



# In summary

- ◆ Array Notation as a serialized form
- ◆ Array Notation and code
- ◆ Array Notation and variables



I hope you've learnt at least a couple of things today.

Glasgow 126.98

Southampton 108.42