



General Computer Science for Engineers CISC 106 Lecture 18

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Lecture Overview

- Cell arrays (Section 7.2)
- Midterm I

What is a Cell Array?

- A matrix that can contains in each cell
 - data of different types, sizes and dimensions
- A cell in a cell array can hold
 - a single element or
 - an array of elements

A Cell Array

cell 1,1 $\begin{bmatrix} 1 & 3 & -7 \\ 2 & 0 & 6 \\ 0 & 5 & 1 \end{bmatrix}$	cell 1,2 'This is a text string.'
cell 2,1 $\begin{bmatrix} 3+i4 & -5 \\ -i10 & 3-i4 \end{bmatrix}$	cell 2,2 []

Figure 7.1 The individual elements of a cell array may point to real arrays, complex arrays, string, other cell arrays, or even empty arrays.

A Cell Array

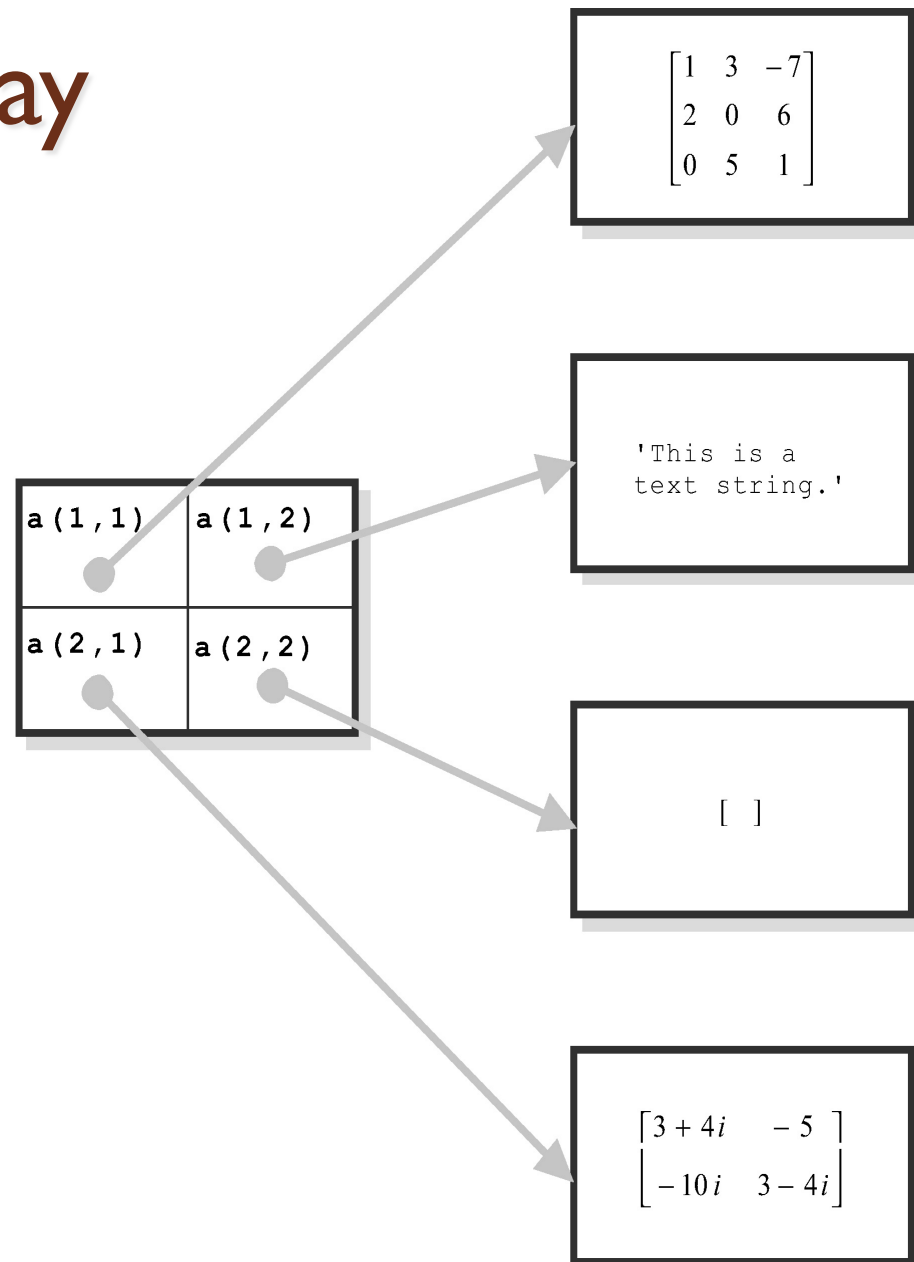


Figure 7.2 Each element of a cell array holds a *pointer* to another data structure, and different cells in the same cell array can point to different types of data structures.

Cell Array Syntax

`c = cell(n)` creates n-by-n empty cell array

`c = cell (2)`

`c =`

```
[] []  
[] []
```

Note: `[]` is an empty cell

Cell Array Syntax

`c = cell(m, n)` creates an m-by-n empty cell array.
Arguments m and n must be scalars.

`c = cell (2,3)`

`c =`

[]	[]	[]
[]	[]	[]

Cell Array Example

`A = ones(2,2)`

`A =`

1	1
1	1

`c = cell(size(A))`

`c =`

[]	[]
[]	[]