

JULIA PROGRAMMING

Data Structures

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Collections & Data Structures

"Julia programming language" 2012 1.7

{"Julia programming language", 2012, 1.7}

["Julia", "Python", "C++", "C#", "Java"] ("Julia", 2022, 3.14, 5 + 3im)

Collections & Data Structures

grade_albert = 100

grade_marie = 99

grade_richard = 98

grade_carl = 99

["albert", "marie", "richard", "carl"]

[100, 99, 98, 97]

("albert", 100, "marie", 99, "richard", 98, "carl", 97)

("albert" => 100, "marie" => 99, "richard" => 98, "carl" => 97)

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Tuples

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Dictionaries

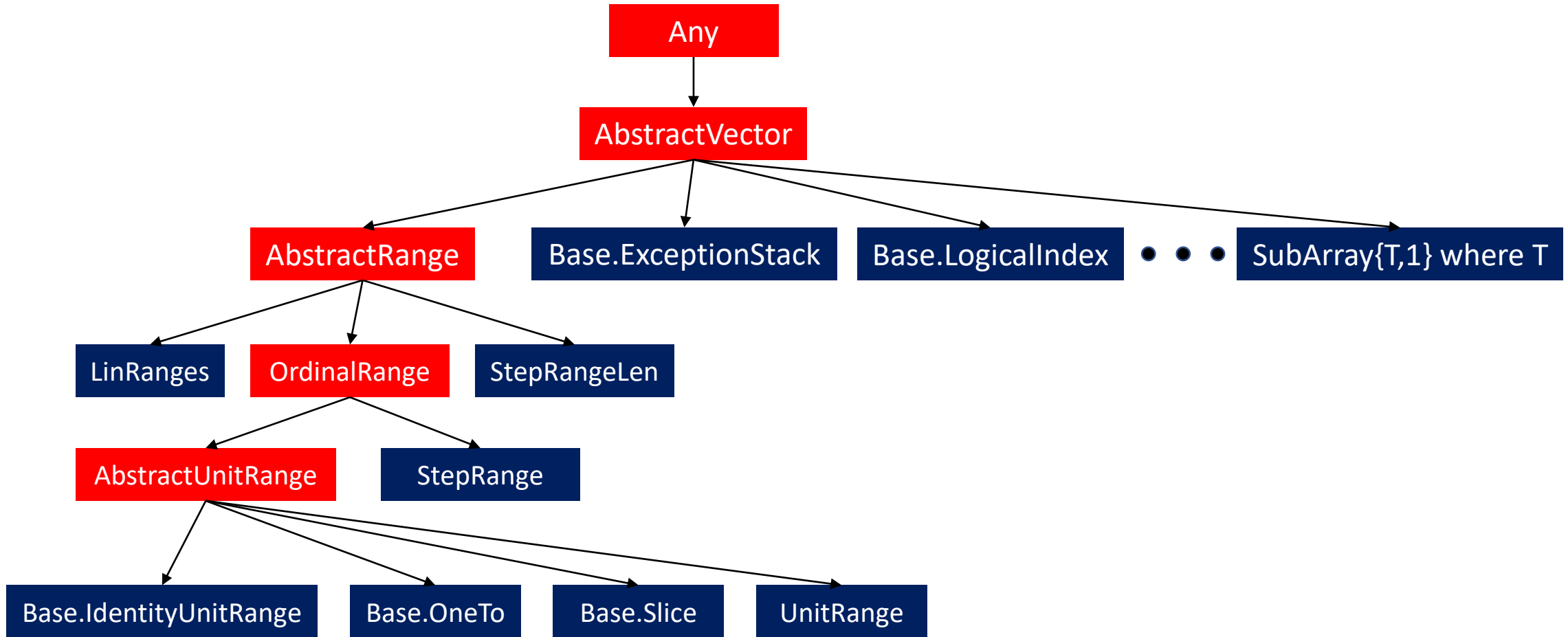
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Ranges

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Ranges



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Arrays

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Vectors and Matrices

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Vectors & Matrices

[1, 2, 3, 4]

$\begin{bmatrix} 1 \\ 2 \\ 3 \\ 4 \end{bmatrix}$

```
julia> [1, 2, 3, 4]  
4-element Vector{Int64}:
```

1
2
3
4

(4,)

```
julia> [1 2 3; 4 5 6; 7 8 9; 10 11 12]  
4x3 Matrix{Int64}:
```

$\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \\ 10 & 11 & 12 \end{bmatrix}$

1 2 3
4 5 6
7 8 9
10 11 12

(4, 3)

```
julia> [1 2 3 4]  
1x4 Matrix{Int64}:  
1 2 3 4
```

[1 2 3 4]

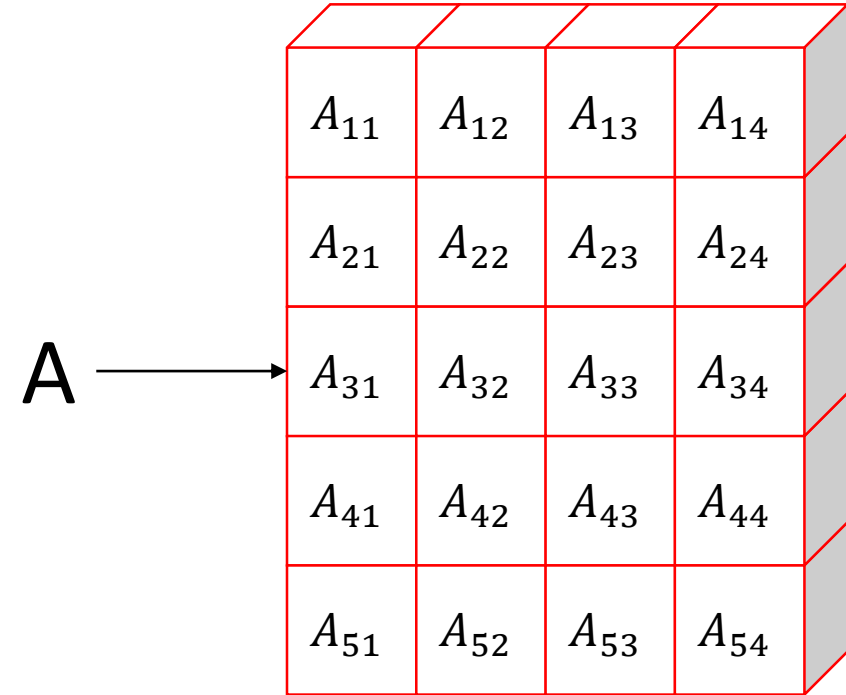
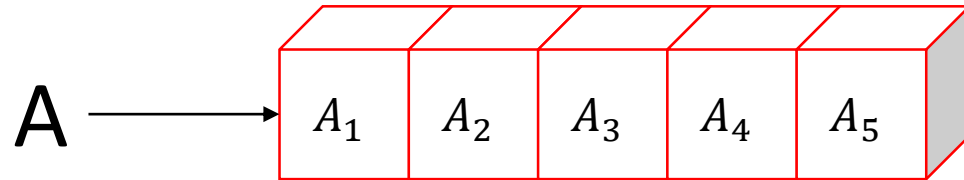
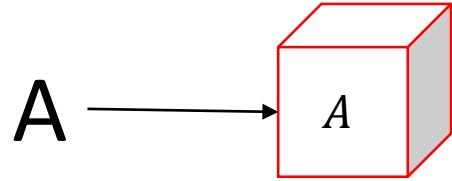
(1, 4)

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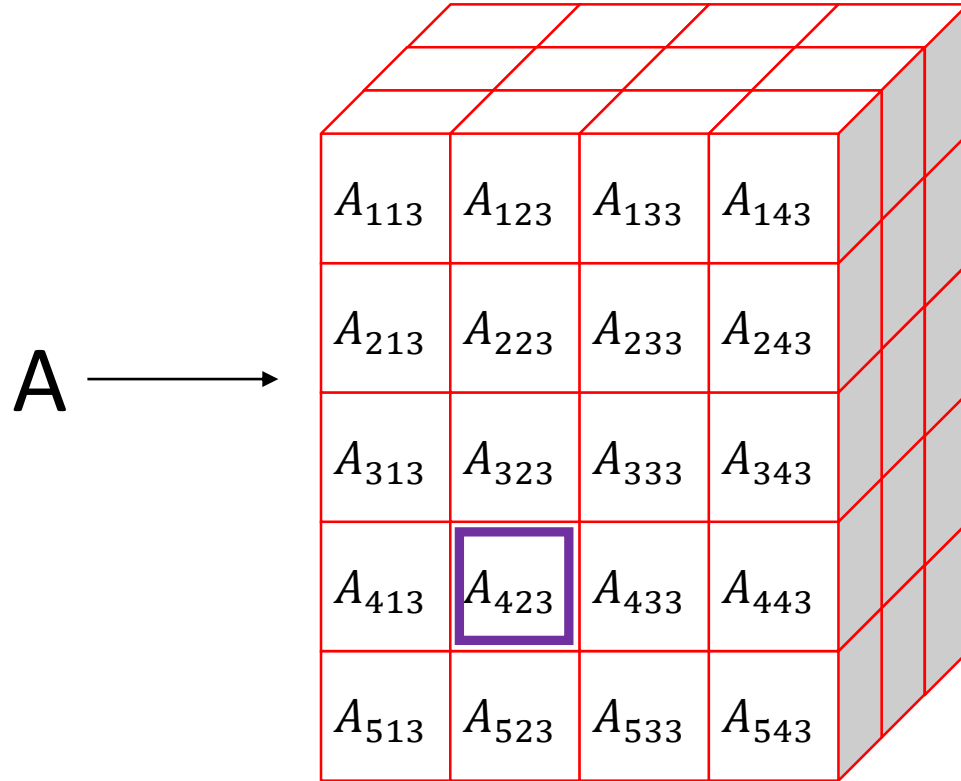
Multidimensional Arrays

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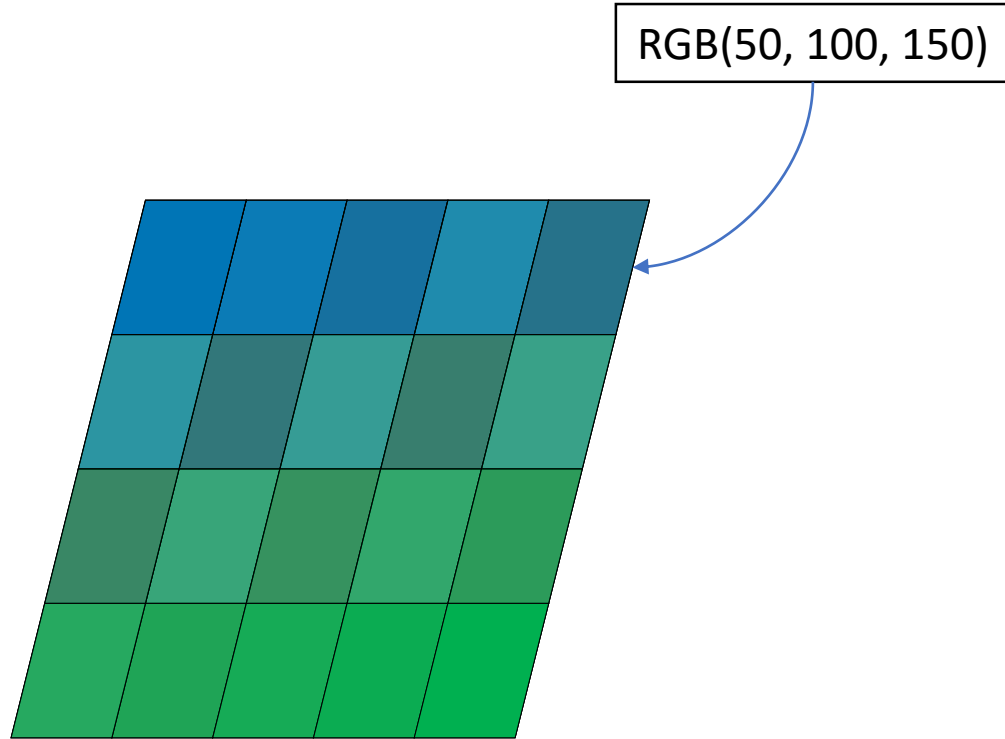
Multidimensional Arrays



Multidimensional Arrays



Multidimensional Array Example



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Broadcasting and Dot Syntax

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Sets

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Basic Linear Algebra

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