GET STARTED WITH

a KodeKloud Introductory Course

• ARRAYS SLICES MAPS

Arrays

An array is an ordered **collection of elements**, all of the same data type.

Array Initialization

main.go

```go
package main
import "fmt"

func main() {
  var fruits[4]string=
[4]string{"apples","pears", "oranges",
"lemons"}
  fmt.Println(fruits)
}
```

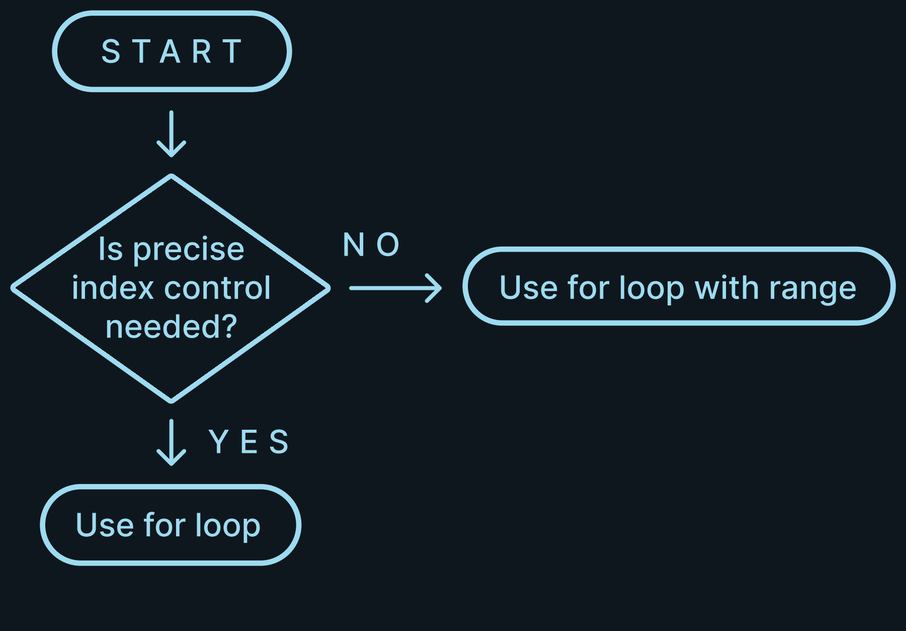
- Name of the array
- Length of the array
- Data type
- Values

! Arrays are fixed-size, once declared, the size of an array cannot be changed.

Looping Through An Array

Looping through an array involves systematically visiting **each element in the array**, one at a time, to perform some operation or gather information.

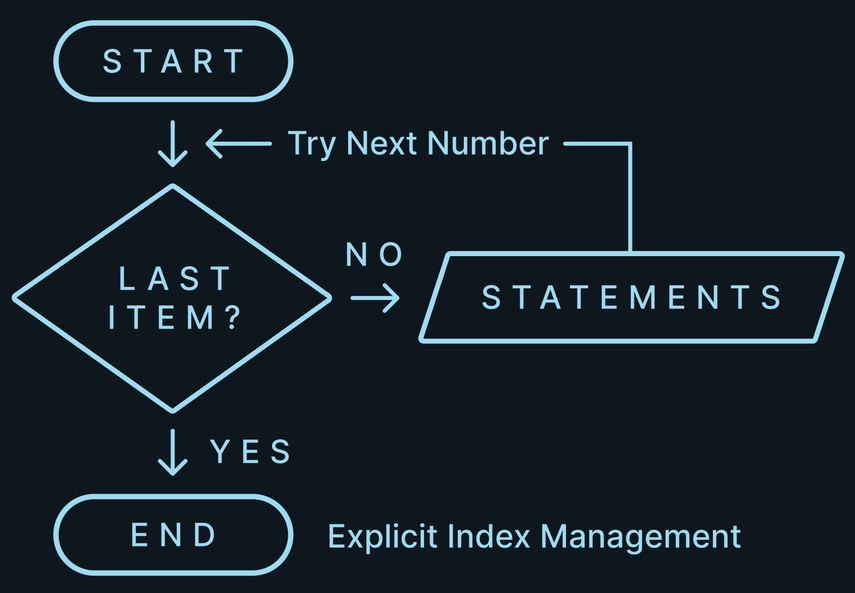
Decision Making Process



! When using range with slices or arrays, it returns both the index and the value. **If you only need the value, you can use an underscore (_) to discard the index.**

How To Loop

Using for loop



Explicit Index Management

For Loop Declaration

main.go

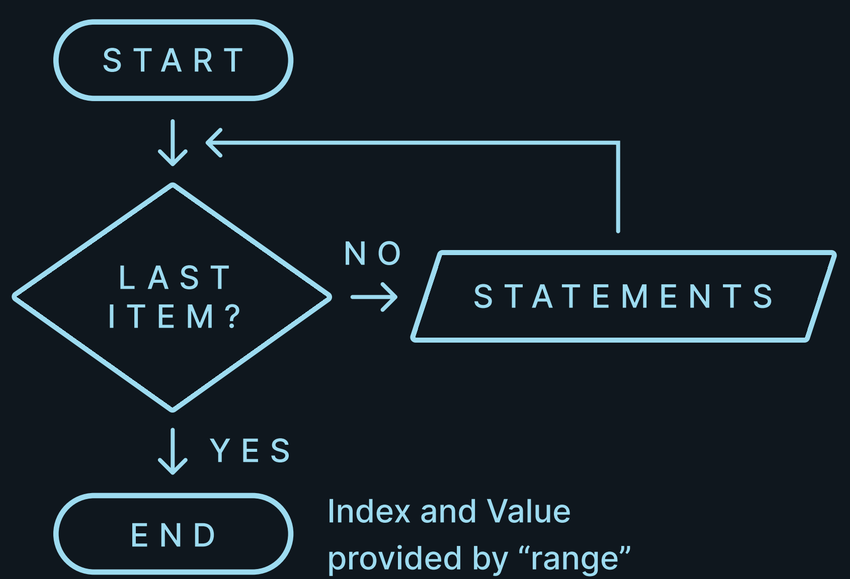
```go
package main
import "fmt"

func main() {
  var grades [5]int = [5]int{90, 80, 70, 80, 97}

  for i := 0; i < len(grades); i++ {
    fmt.Println(grades[i])
  }
}
```

- Initialization
- Post-Condition
- Condition
- Loop body

Using Range Keyword



Index and Value provided by “range”

Range Loop Declaration

main.go

```go
package main
import "fmt"

func main() {
  var grades [5]int = [5]int{90, 80, 70, 80, 97}
  for index, element := range grades {
    fmt.Println(index, "=>", element)
  }
}
```

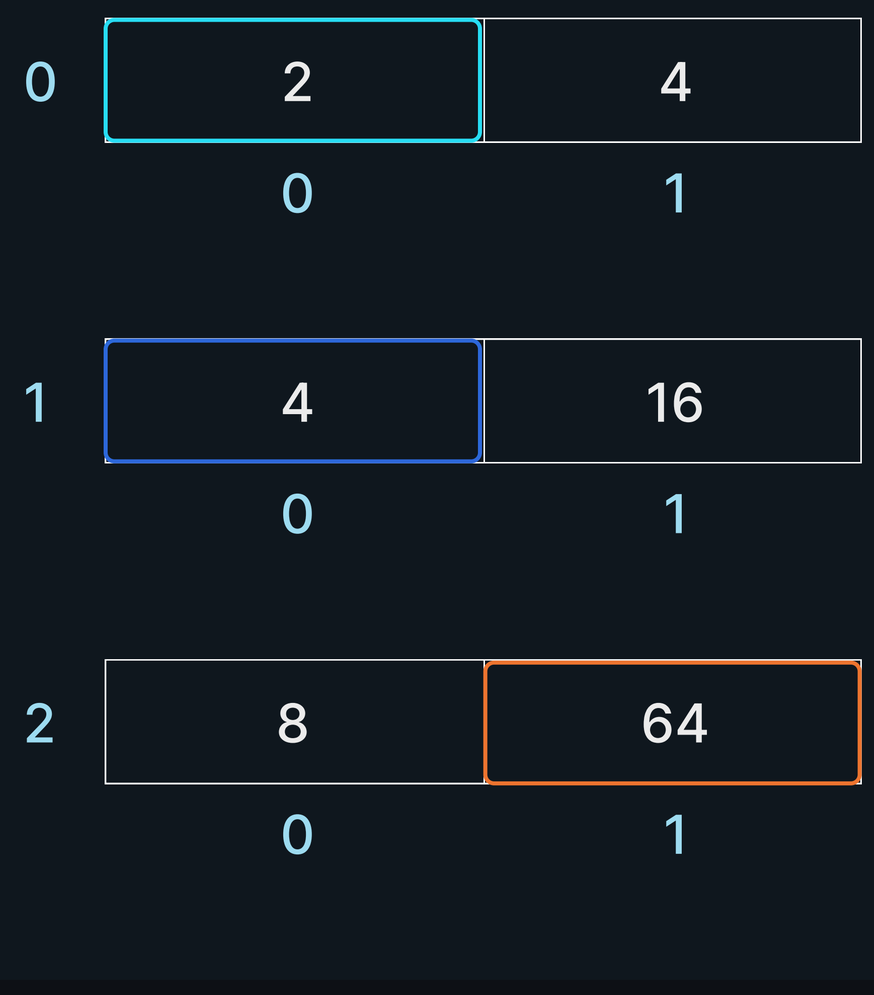
- Variables
- Loop body
- Rage expression

Multidimensional Arrays

A multidimensional array is **an array that has more than one dimension.** This concept allows you to organize data in a grid-like structure, such as a table or matrix.

2 Dimensional Arrays

2 DIMENSIONAL ARRAY




```
arr[2][1] => 64
arr[1][0] => 4
arr[0][0] => 2
```

main.go

```go
package main
import "fmt"

func main() {
  arr := [3][2]int{{2, 4}, {4, 16}, {8, 64}}
  fmt.Println(arr[2][1])
}
```

- Size of the Array
- Array Initialization

Be mindful of memory usage, especially when working with large multidimensional slices, as **dynamic resizing and allocation can impact memory efficiency.**

Go does not have native multidimensional arrays. Instead, **you use slices of slices** to create multidimensional data structures. Each slice represents a dimension.

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