

A Whirlwind Tour of Go

Just the Cool Parts

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The Point

- “What *is* Go?”
- “What is it actually good for?”
- “Why should I care?”

30 Seconds of History

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- Dreamed up while waiting on a 45-minute C++ compile
 - Fast compilation
 - Native binary compiler with low overhead
 - Strong static typing
 - Extraordinarily spartan

Go Syntax

- Type declarations *follow* identifier names

```
var x int
```

```
var UserName string
```

```
func AddNumbers(x, y int) int { ... }
```

```
func DivideNumbers(x, y int) (int, error) { ... }
```

```
type Shape struct {
```

```
    X      int
```

```
    Y      int
```

```
    Color  ColorCode
```

```
}
```


Program Structure

- Basic unit is a *package* (namespace boundary).
- Multiple source files in a package, in the same directory tree.
- Every program must have a `main` package.
- The `main` package has a `main` function.
- Import packages into the program using the `import` statement.
- Always prefix identifiers from imported packages with their package name.
- Identifiers can be *public* or *private* w/r/t package boundaries.
 - Identifier names starting with an uppercase letter are public.
 - All others are private.

Hello, World

```
/* Standard-issue "Hello, World" program in Go */  
package main  
  
import "fmt"  
  
func main() {  
    fmt.Println("Hello, 世界")  
}
```

The Playground

- Interactive playground to immediately try something in Go.
- <https://go.dev/play/>

The screenshot shows the Go Playground web interface. At the top is a teal navigation bar with the Go logo and links for 'Why Go', 'Learn', 'Docs', 'Packages', and 'Community'. Below this is a dark grey header area with the title 'The Go Playground', a version selector set to 'Go 1.22', and buttons for 'Run', 'Format', and 'Share'. To the right of these buttons is a dropdown menu showing 'Hello, World!'. The main area is a code editor with a dark background. It contains the following Go code:

```
1 // You can edit this code!
2 // Click here and start typing.
3 package main
4
5 import "fmt"
6
7 func main() {
8     fmt.Println("Hello, 世界")
9 }
10
11
```

Below the code editor, the output of the program is displayed: 'Hello, 世界' followed by 'Program exited.' on a new line.

Importing Third-Party Packages

- Standard library package names are simple names:

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import "fmt"  
import "encoding/json"  
import "flag"  
import "math"
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- Getting packages from public repositories:

```
import "github.com/MadScienceZone/go-gma/v5/dice"
```

Automatic API Documentation

- `https://pkg.go.dev/repository-url`

The screenshot shows the Go Package Dev website for the 'dice' package. The header includes the Go logo, a search bar, and navigation links: 'Why Go', 'Learn', 'Docs', 'Packages' (active), and 'Community'. The main content area shows the package name 'dice' with a 'package' tag. Below this, it lists package details: Version: v5.17.0 (Latest), Published: Feb 28, 2024, License: BSD-3-Clause, Imports: 16, and Imported by: 0. A section for 'Details' includes links for 'Valid go.mod file', 'Redistributable license', 'Tagged version', and 'Stable version', along with a link to 'Learn more about best practices'. The 'Repository' section shows the GitHub link 'github.com/MadScienceZone/go-gma'. The 'Links' section has a link to 'Open Source Insights'. On the left, a sidebar contains a 'Jump to ...' dropdown and a list of navigation items: 'Documentation' (active), 'Overview', 'Index', 'Constants', 'Variables', 'Functions', 'Types', and 'Source Files'. The main content area has a '<> Documentation' header and an 'Overview' section. The 'Overview' text states: 'Package dice provides a general facility for generating random numbers in fantasy role-playing games. The preferred usage model is to use the higher-level abstraction provided by DieRoller, which rolls dice as described by strings. For example:'. Below this is a code block showing a Go example:

```
label, results, err := Roll("d20+16 | c")
label, result, err := RollOnce("15d6 + 15 fire + 1 acid")
```

. Further down, it says: 'If you need to keep the die roller itself around after the dice are rolled, to query its status, or to produce a repeatable string of die rolls given a custom seed or number generator, create a new DieRoller value and reuse that as needed:'. At the bottom is another code block:

```
dr, err := NewDieRoller()
label, results, err := dr.DoRoll("d20+16 | c")
```

. A refresh icon is visible in the bottom right corner of the page content.

GO Search packages or symbols Why Go Learn Docs Packages Community

Discover Packages > github.com/MadScienceZone/go-gma/v5 > dice

dice package

Version: v5.17.0 **Latest** | Published: Feb 28, 2024 | License: BSD-3-Clause | Imports: 16 | Imported by: 0

Details [Valid go.mod file](#) [Redistributable license](#) [Tagged version](#) [Stable version](#) [Learn more about best practices](#)

Repository [github.com/MadScienceZone/go-gma](#)

Links [Open Source Insights](#)

Jump to ...

Documentation

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Functions

Types

Source Files

<> Documentation

Overview

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