

#golang beginner's workshop

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me

i_am := “Chetan Sachdev”

myJob := “Practice lead (Flash Platform) @
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i_am != “an expert in #golang”

Evolution of Go

Emerging Languages Camp 2010



<http://confreaks.com/videos/115-elcamp2010-go> by Rob Pike

and Read the 1978 CSP paper. CSP stands for Communicating sequential processes by C. A. R. Hoare
http://en.wikipedia.org/wiki/Communicating_sequential_processes

Agenda

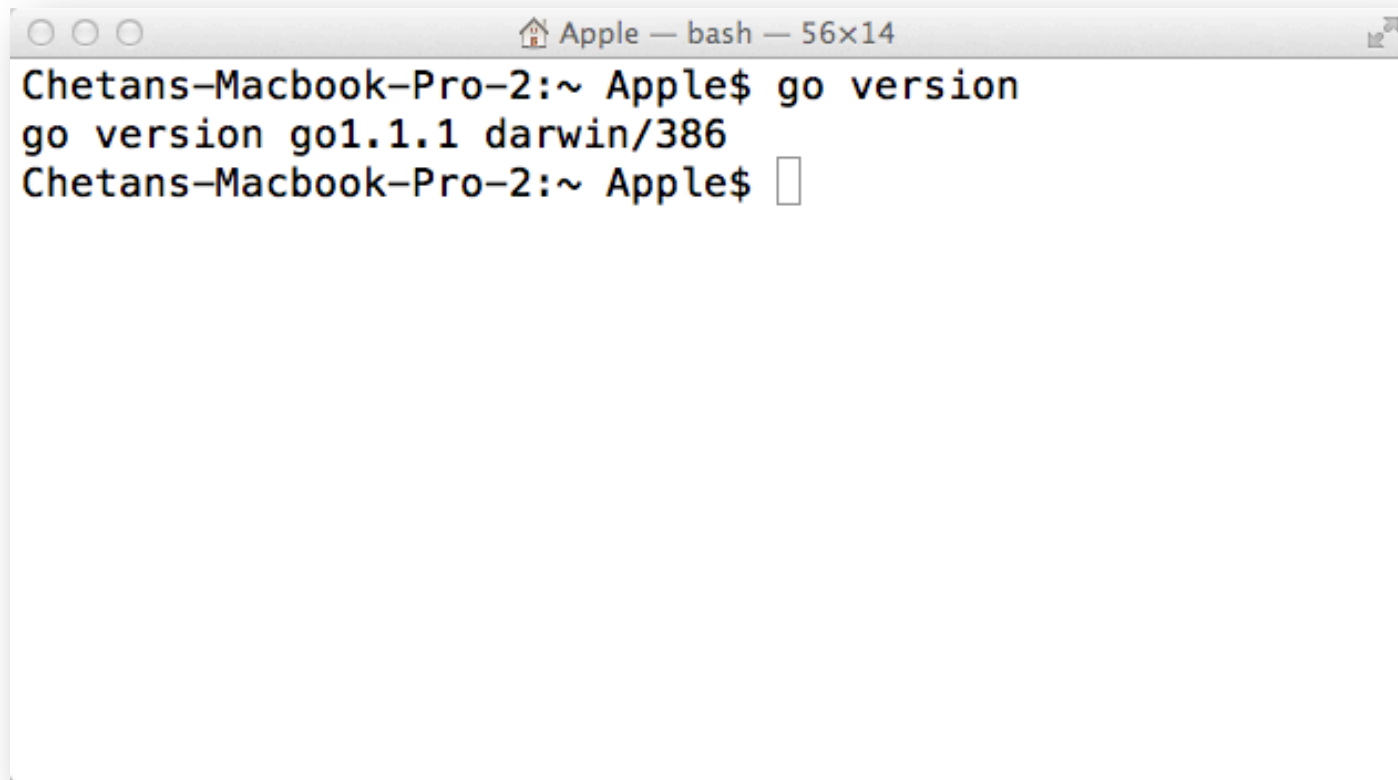
1. Setup golang dev environment
2. golang basics
 - ✓ “Hello World” program
 - ✓ Variables and constants
 - ✓ Branching (if/else and switch)
 - ✓ Loops
 - ✓ Functions
 - ✓ Structure
 - ✓ Go routines
3. Resources

Installation

- Download go package from <https://code.google.com/p/go/downloads/list>
- Follow installation steps described at <http://golang.org/doc/install>
- Download slides and source files from <https://github.com/cksachdev/golang-presentations/tree/master/beginner>
- Choose your code editor

Validate installation

Open console and run this command



```
Chetans-Macbook-Pro-2:~ Apple$ go version
go version go1.1.1 darwin/386
Chetans-Macbook-Pro-2:~ Apple$
```

A screenshot of a macOS terminal window. The title bar at the top shows three window control buttons (red, yellow, green) on the left, a home icon followed by the text 'Apple — bash — 56x14' in the center, and a close button on the right. The terminal content shows a prompt 'Chetans-Macbook-Pro-2:~ Apple\$' followed by the command 'go version'. The output of the command is 'go version go1.1.1 darwin/386'. Below the output, the prompt 'Chetans-Macbook-Pro-2:~ Apple\$' is shown again with a cursor (a small white rectangle) at the end.

01-helloworld.go

```
package main

import "fmt"

func main() {

    fmt.Println("hello world")

}
```

02-variables.go

```
package main

import "fmt"

var gi int
func main() {
    fmt.Println(gi) //0
    var i int
    fmt.Println(i) //0
    i = 25
    fmt.Println(i) //25
    j := 5

    s := "Hello!"

    fmt.Println("The two values are:", j, s)
    //The two values are: 5, Hello
    fmt.Printf("The integer is %d, and the string is %s.\n", j, s)
    //The integer is 5, and the string is Hello.
    var arr1 []int
    arr1 = []int{1, 2, 3, 4}
    arr2 := []int{1, 2, 3, 4}
    fmt.Println(arr1, arr2) //[1,2,3,4] [1,2,3,4]
}
```


03.1-branchingif.go

```
package main
```

```
import "fmt"
```

```
func main() {
```

```
    if 7%2 == 0 {  
        fmt.Println("7 is even")  
    } else {  
        fmt.Println("7 is odd")  
    }  
}
```

```
if 8%4 == 0 {  
    fmt.Println("8 is divisible by 4")  
}
```

```
if num := 9; num < 0 {  
    fmt.Println(num, "is negative")  
} else if num < 10 {  
    fmt.Println(num, "has 1 digit")  
} else {  
    fmt.Println(num, "has multiple digits")  
}
```

```
}
```

03.2-branchingswitch.go

```
package main

import ("fmt")

func main() {
    i := 2
    fmt.Print("write ", i, " as ")
    switch i {
    case 1:
        fmt.Println("one")
    case 2:
        fmt.Println("two")
    case 3:
        fmt.Println("three")
    }
}
```

03.2.1-branchingswitch.go

```
package main
import ("fmt", "time")
func main() {
    switch time.Now().Weekday() {
        case time.Saturday, time.Sunday:
            fmt.Println("it's the weekend")
        default:
            fmt.Println("it's a weekday")
    }
    t := time.Now()
    switch {
        case t.Hour() < 12:
            fmt.Println("it's before noon")
        default:
            fmt.Println("it's after noon")
    }
}
```

04-loops.go

```
package main

import "fmt"

func main() {
    arr := []int{1, 2, 3, 4}

    fmt.Println("\nWithin for loop ...")
    for i := 0; i < len(arr); i++ {
        fmt.Println(i)
    }

    j := 0
    fmt.Println("\nWithin infinite for loop ...")
    for {
        if j > len(arr) {
            break
        }

        fmt.Println(j)
        j = j + 1
    }
}
```

05-functions.go

```
package main

import (
    "fmt"
)

func Add(i, j int) int {
    return i + j
}

func main() {
    s := Add(5, 10)
    fmt.Println("Sum is: ", s)
}
```

05.1-multipleassignment.go

```
package main
```

```
import (  
    "fmt"  
    "strconv"  
)
```

```
func SumProd(i, j int) (int, int) {  
    return i + j, i * j  
}
```

```
func main() {  
    s, p := SumProd(5, 6)  
    fmt.Println(s, p)  
  
    arr := []string{"Hello", "how", "are", "you?"}  
    for i, v := range arr  
        fmt.Println(i, v)  
    }  
  
    a := "20a"  
    if _, err := strconv.Atoi(a); err != nil {  
        fmt.Println("Error! ", err)  
    }
```

06-structure.go

```
package main
import "fmt"
```

```
type MyCar struct {
    color    string
    maxSpeed int
}
```

```
func main() {
    m := MyCar{}
    fmt.Println(m) //{ 0}

    m = MyCar{"red", 100}
    fmt.Println(m) //{red, 100}

    m.color = "blue"
    m.maxSpeed = 150
    fmt.Println(m) //{blue, 150}
    fmt.Println("color is:", m.color)
    //color is: blue

    m = MyCar{maxSpeed: 150, color: "green"}
    fmt.Println(m) //{green, 150}
}
```

06.1-structremethods.go

```
package main

import "fmt"

type MyCar struct {
    speed int
}

func (m *MyCar) acc() {
    m.speed = m.speed + 10
}

func main() {
    m := MyCar{}
    fmt.Println(m)

    m.acc()
    fmt.Println(m)
}
```


07-goroutines.go

```
package main

import "fmt"

func f(from string) {
    for i := 0; i < 3; i++ {
        fmt.Println(from, ":", i)
    }
}

func main() {

    f("direct")

    go f("goroutine")

    go func(msg string) {
        fmt.Println(msg)
    }("going")

    var input string
    fmt.Scanln(&input)
    fmt.Println("done")

}
```

Resources

- Tools
 - Editors
<http://go-lang.cat-v.org/text-editors/>
- Books
 - Learning go
<http://www.miek.nl/projects/learninggo/>
 - GoProgramming
<http://archive.org/details/GoProgramming>
 - Network programming with go
<http://jan.newmarch.name/go/>
- www
 - go-wiki
<https://code.google.com/p/go-wiki/w/list>
 - Gobyexample
<https://gobyexample.com/>

Look into the source

- Blog engine

<https://github.com/PuerkitoBio/trofaf>

Credits

- Sathish VJ

<https://github.com/sathishvj/golang-workshops/tree/master/beginner/>

Questions?

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