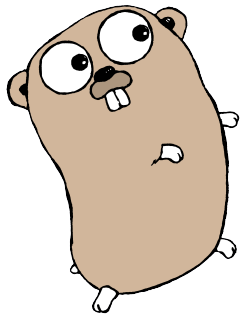


#golang
beginner's workshop

Chetan Sachdev
@cksachdev

me

i_am := “Chetan Sachdev”

myJob := “Practice lead (Flash Platform) @ Tarento Technologies Pvt Ltd”

i_am != “an expert in #golang”

Introduction

Go is a concurrent open source programming language developed at Google.

- Compiled
- Statically typed
- Concurrent
- Simple
- Productive

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

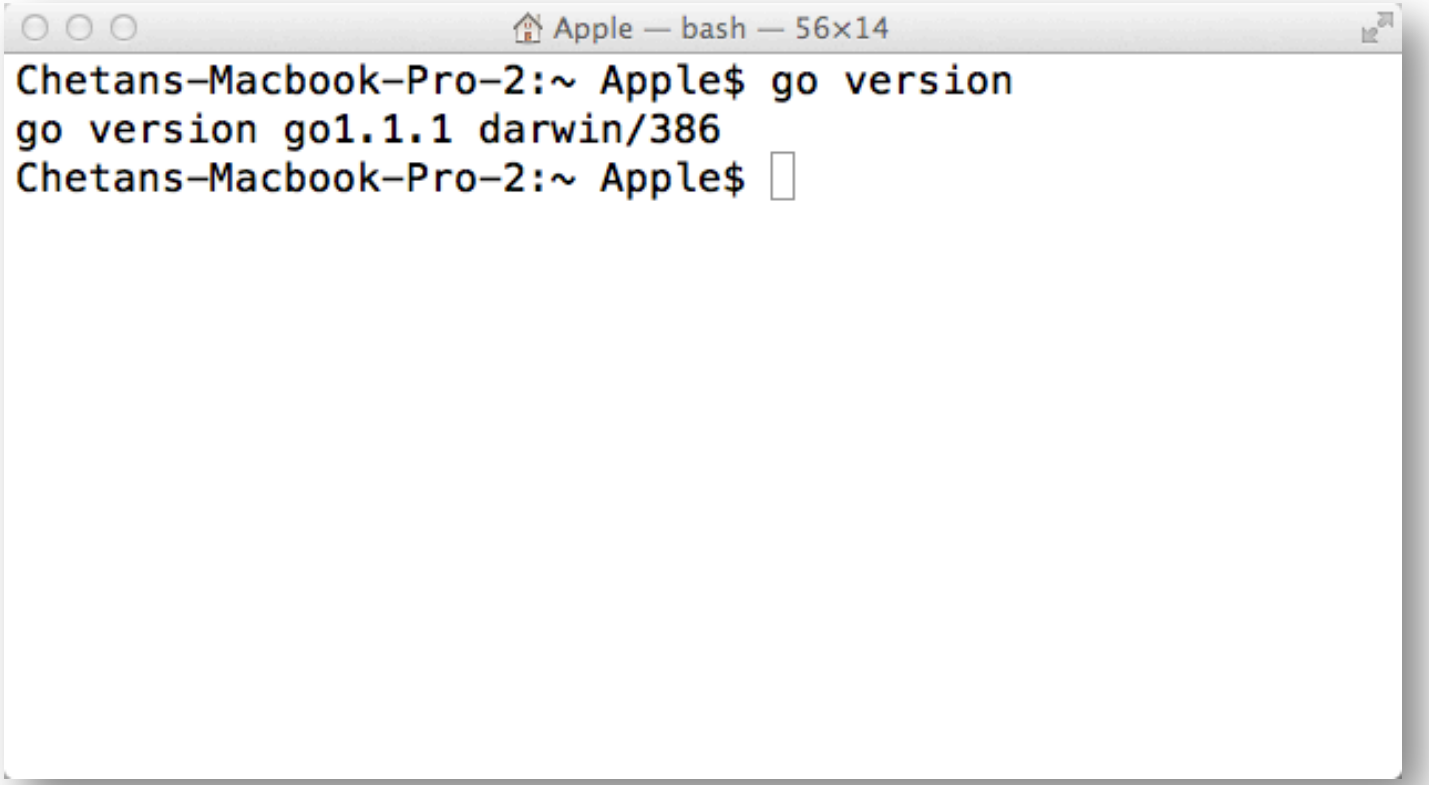
1. Setup golang dev environment
2. golang basics
   - ✓ “Hello World” program
   - ✓ Variables and constants
   - ✓ Branching (if/else and switch)
   - ✓ Loops
   - ✓ Functions
   - ✓ Structure
   - ✓ Go routines
3. Resources

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



01-helloworld.go

```
package main

import "fmt"

func main() {

    fmt.Println("hello world")

}
```

02-variables.go

```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

```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

```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

```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

```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

```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-structuremethods.go

```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

```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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