Introduction to Golang

Concepts of Programming Languages 4 October 2018

Johannes Weigend QAware GmbH

Gopher



Why Go?

Go is the major language behind the Cloud Native Stack

www.cncf.io/(https://www.cncf.io/)





































- The most important components are written in Go: Docker, Kubernetes, etcd, Prometheus, Grafana, ...
- Go is Open Source and maintained by Google
- Go is a distributed, parallel language designed for systems programming at Google to solve the problems of C++ code.

Hello World

```
// Copyright 2018 Johannes Weigend
// Licensed under the Apache License, Version 2.0

package main
import "fmt"

func main() {
    fmt.Printf("Hello %s", "Programming with Go \xE2\x98\xAF\n") // \xE2\x98\xAF -> @
    fmt.Printf("Hello %s", "Programming with Go \\n")
}
```

Palindrome

```
// IsPalindrome implementation. Does only work for 1-Byte UTF-8 chars (ASCII).
func IsPalindrome(word string) bool {
    for pos := 0; pos < len(word)/2; pos++ {
        if word[pos] != word[len(word)-pos-1] {
            return false
        }
    }
    return true
}</pre>
```

```
// palindrome_test.go
func TestPalindrome(t *testing.T) {
    if !IsPalindrome("") == true {
        t.Error("isPalindrome('' should be true. But is false.")
    }
    if !IsPalindrome("o") == true {
        t.Error("isPalindrome('o' should be true. But is false.")
    }
    if !IsPalindrome("oto") == true {
        t.Error("isPalindrome('oto' should be true. But is false.")
    }
    if !IsPalindrome("ottos") == false {
        t.Error("isPalindrome('ottos' should be false. But is true.")
    }
}
```

Introduction to Golang

Rob Pike @ Google 2009 (60 Min)

www.youtube.com/watch?v=rKnDgT73v8s(https://www.youtube.com/watch?v=rKnDgT73v8s)



Some Questions

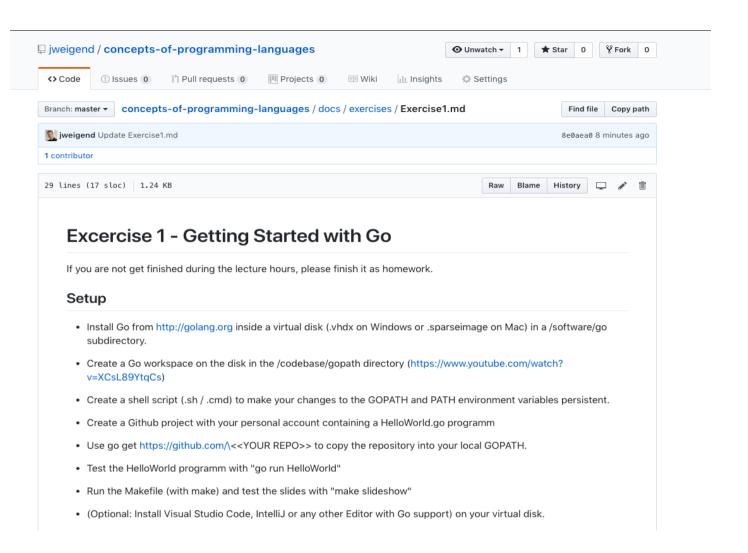
- What makes Go different to other Languages?
- What makes Go similar to other Languages?
- Discuss your personal opinions in a group of students!

7

Exercise 1

github.com/jweigend/concepts-of-programming-languages/blob/master/docs/exercises/Exercise1.md (https://github.com/jweigend/concepts-of-programming-

languages/blob/master/docs/exercises/Exercise1.md)



See also

github.com/jweigend/concepts-of-programming-languages (https://github.com/jweigend/concepts-of-programming-languages)

golang.org/(https://golang.org/)

golang.org/doc/ (https://golang.org/doc/)

a

Thank you

Johannes Weigend QAware GmbH johannes.weigend@qaware.de (mailto:johannes.weigend@qaware.de) http://www.qaware.de (http://www.qaware.de) @johannesweigend (http://twitter.com/johannesweigend)