Level 2-2

Underneath the Tracks

Functions



The Greeting Program

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Let's write a program that **outputs a greeting message**. The message will be different depending on which hour of the day we run our program.

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Grabbing Current Time

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We'll start by grabbing the current hour of the day.

```
src/hello/main.go
package main
                  Import package from standard library.
import (
  "fmt"
  "time"
                      Assign return value to a new
                      variable using type inference.
func main()
  hourOfDay := time.Now().Hour()
```

The getGreeting() Function Signature

Named functions in Go must have **a name**, followed by **any arguments** they expect, and end with the **data type** they return (if any). This is commonly referred to as a **function signature**.

```
src/hello/main.go
func main() {
  hourOfDay := time.Now().Hour()
  greeting := getGreeting(hourOfDay)
    How do we find out which
    data type this is?
func getGreeting(hour
```

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Calling the new function passing the current hour of the day as its single argument

ANIMATION: func getGreeting shows first, THEN string, THEN (hour)

Expected return type for this function

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The Return Data Type

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One way to find out the **data type returned by a function** from the Go standard library is by referring to the official documentation.

```
src/hello/main.go
                                                                 http://go.codeschool.com/go-time-package
                                                                   https://golang.org/pkg/time/
                                                                  nunc (t mine) ronnattiayout string) string
                                                                  func (t *Time) GobDecode(data []byte) error
func main() {
                                                                  func (t Time) GobEncode() ([]byte, error)
   hourOfDay := time.Now().Hour()
                                                                  func (t Time) Hour() int
                                                                  func (t Time) ISOWeek() (year, week int)
   greeting := getGreeting(hourOfDay)
                                                                  func (t Time) In(loc *Location) Time
                                                            According to the docs for the time package,
                                                            Hour() returns a value of type int.
func getGreeting(hour int) string {
                                                     The complete function signature
```

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Returning From getGreeting()

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We'll return a different greeting message based on the hour of the day passed as argument.

```
src/hello/main.go
func getGreeting(hour int) string {
  if hour < 12 {
    return "Good Morning"
                                         We can nest ifs
  } else if hour < 18 {</pre>
                                         inside else clauses.
    return "Good Afternoon"
  } else {
    return "Good Evening"
```

ANIMATION: each of these two line pairs comes in separately

Returning From getGreeting()

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We run our program and see a different output depending on the current time of day.

```
src/hello/main.go
                                                             go run main.go
                                                                 Good Morning
func main() {
                                                               run main.go
  hourOfDay := time.Now().Hour()
  greeting := getGreeting(hourOfDay)
                                                                Good Afternoon
  fmt.Println(greeting)
                                                               run main.go
func getGreeting(hour int) string {
```