Type Assertion

This lesson explains converting the type of a given value to another specific value using examples

WE'LL COVER THE FOLLOWING

Introduction

In the previous lesson, we covered type conversions. Now, we will move on to discuss how, if you have a value that you want to convert to another or a specific type (in case of `interface{}`), you can use **type assertion**. A type assertion takes a value and tries to create another version in the specified explicit type.

Examples

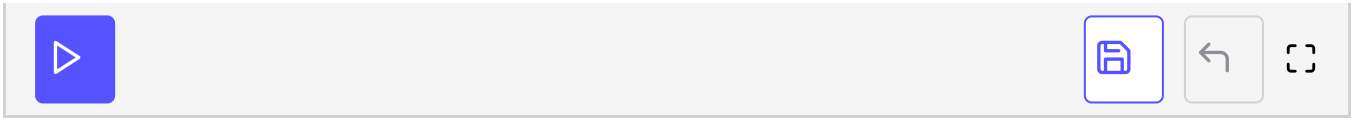
In the example below, the `timeMap` function takes a value and if it can be asserted as a map of `interfaces{}` keyed by strings, then it injects a new entry called “updated_at” with the current time value.

Environment Variables

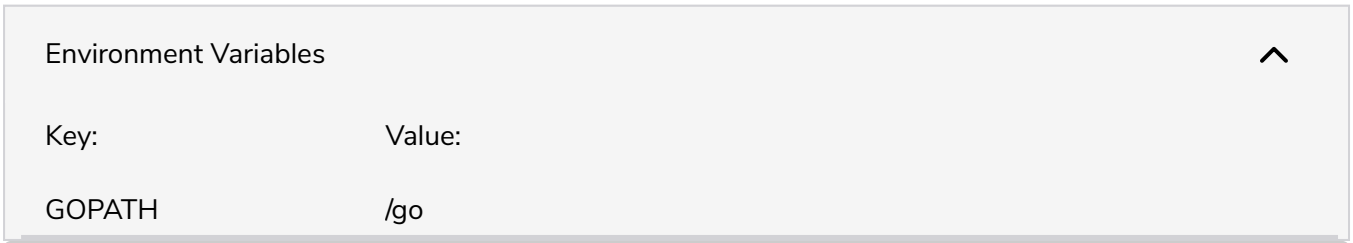
Key:	Value:
GOPATH	/go

```
package main

import (
        "fmt"
        "time"
)

func timeMap(y interface{}) {
        z, ok := y.(map[string]interface{}) //asserting y as a map of interfaces
```

```
        if ok {
                z["updated_at"] = time.Now() //z now has the type map[string]interface
        }

}

func main() {
        foo := map[string]interface{}{
                "Matt": 42,
        }
        timeMap(foo)
        fmt.Println(foo)
}
```

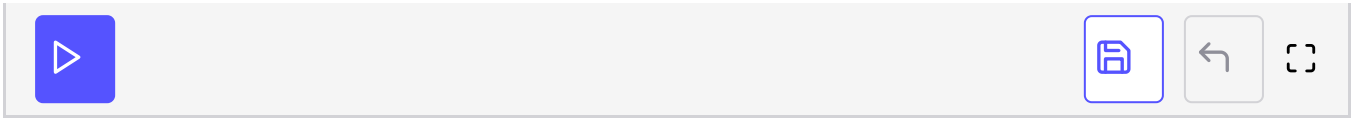


The type assertion doesn't have to be done on an empty interface. It's often used when you have a function taking a param of a specific interface but the function inner code behaves differently based on the actual object type. Here is an example:




```
package main

import "fmt"

type Stringer interface {
        String() string
}

type fakeString struct {
        content string
}

// function used to implement the Stringe interface
func (s *fakeString) String() string {
        return s.content
}

func printString(value interface{}) {
        switch str := value.(type) {
        case string:
                fmt.Println(str)
        case Stringer:
                fmt.Println(str.String())
        }
}

func main() {
        s := &fakeString{"Ceci n'est pas un string"}
        printString(s)
```

```
        printString("Hello, Gophers")

}
```



Another example is when checking if an error is of a certain type:

```
if err != nil {
  if msqlerr, ok := err.(*mysql.MySQLError); ok && msqlerr.Number == 1062 {
    log.Println("We got a MySQL duplicate :(")
  } else {
    return err
  }
}
```

- Read more in the Effective Go guide

Quiz

Quiz on Type Assertion

Q

Which of the following is Type Assertion used for?

Check Answers

Now that we know how inbuilt types can be manipulated, we will move on to discuss how we can create our own types in Go.