

Testing Web Applications



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Introduction



Unit tests

- Model layer
- Controller layer

Profiling

Testing the Model Layer

`user_test.go`

```
func TestUpdatesLastLoginTime(t *testing.T) {  
    ...  
}
```



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Testing the Controller Layer

```
func (h home) handleHome (w http.ResponseWriter, r
*http.Request) {}
```

Options

Run application

Simulate request and response



net/http/httpptest

```
func NewRequest(method, target string, body io.Reader) *http.Request
```

```
type ResponseRecorder {  
    Code int  
    HeaderMap http.Header  
    Body *bytes.Buffer  
    Flushed bool  
}
```



Profiling

Memory consumption

CPU usage

Web interface

Blocked goroutines

Executing traces



Profiling

```
import _ "net/http/pprof"
```

```
go tool pprof http://localhost:8000/debug/pprof/heap           // memory
go tool pprof http://localhost:8000/debug/pprof/profile        // CPU
go tool pprof http://localhost:8000/debug/pprof/block          // goroutines
go tool pprof http://localhost:8000/debug/pprof/trace?seconds=5 // trace

http://localhost:8000/debug/pprof                             // website
```



Summary



Unit tests

- Model layer
- Controller layer

Profiling



Outline

Beyond
HTTP/1.1

Basic
requests

Testing

Templating
Basics

View

Smart
Templates

Routing

Controller
Request
Processing

Middleware

Model
Database
Integration

