LESSON 8

# Go

## Packages & Modules




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# GO PROGRAMMING

LESSON 8

## Packages, Modules and the Standard Library

go.mod, organizing packages, go get, and the stdlib highlights

# Modules and go.mod



go.mod

```
module github.com/mariam/gradebook

go 1.23

require (
    github.com/google/uuid v1.6.0
)
```

- A module is a project with a go dot mod file at its root. It names the module path and …
- go dot sum records checksums, so every build downloads exactly the same code. Commit both …

01

# Project Layout



terminal

```
gradebook/
├── go.mod
├── cmd/gradebook/main.go      package main
├── internal/store/store.go     package store
└── grade/grade.go             package grade
```

- Each folder is one package. Files in the same folder share the same package name and can …
- Put commands under cmd, and code you want to keep private to your module under internal, …

02

# Importing Your Packages



cmd/gradebook/main.go

```go
package main

import (
    "fmt"
    "github.com/mariam/gradebook/grade"
)

func main() {
    fmt.Println(grade.Letter(92))     // A
}
```

- Import a package by its module path plus folder. Use its exported names with the package …
- Unused imports are compile errors, like unused variables. goimports adds and removes them …

03

# Adding Dependencies



terminal

```
$ go get github.com/google/uuid@latest
go: added github.com/google/uuid v1.6.0
$ go mod tidy
$ go list -m all
$ go doc strings.Fields
```

- go get downloads a package and records it in go dot mod. go mod tidy removes what you no …
- Browse packages and their documentation on pkg dot go dot dev.

04

# The Standard Library

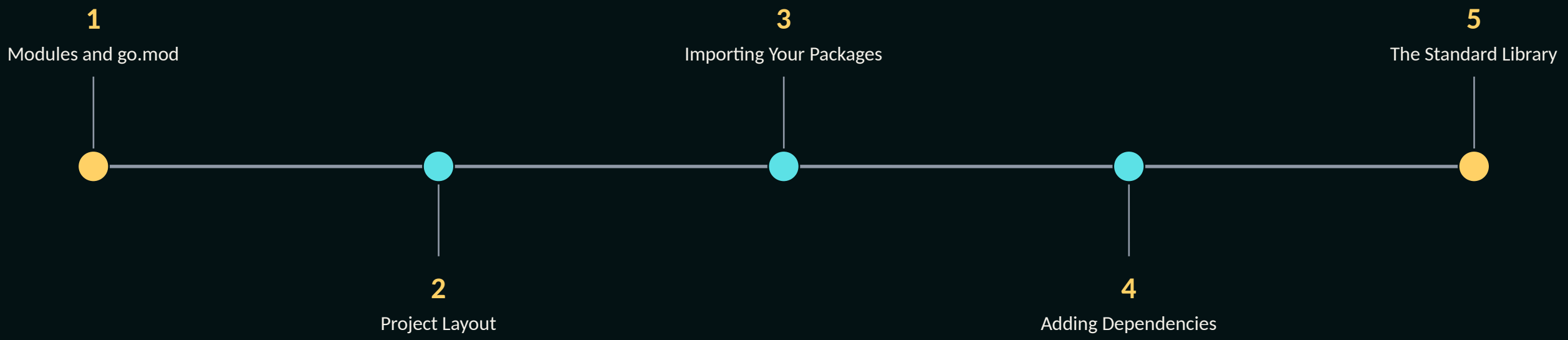


| Package | For |
| --- | --- |
| `strings` | Split, Fields, Contains, Replace |
| `os` | files, args, env vars |
| `time` | Now, Duration, Sleep |
| `encoding/json` | Marshal, Unmarshal |
| `net/http` | clients and servers |

- Go's standard library is famously complete. You can build web servers, parse JSON, run ...
- Learn these first: fmt, strings, strconv, os, io, time, encoding slash json and net slash ...

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# Lesson Map


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Modules and go.mod
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Importing Your Packages
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The Standard Library

# Sources and Further Reading



go.mod

```
module github.com/mariam/gradebook

go 1.23

require (
    github.com/google/uuid v1.6.0
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cmd/gradebook/main.go

```
package main

import (
    "fmt"
    "github.com/mariam/gradebook/grade"
)

func main() {
    fmt.Println(grade.Letter(92))     // A
}
```

Thank you for watching

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