

Go Modules

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Agenda - Go Modules

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 - Go Modules
 - Semantic Versioning
- Go Module Demo
 - module-demo & module-app

Introduction - Go Modules

- Go's new dependency management system.
- A module is a collection of Go packages stored in a file tree with a go.mod file at its root.
- go.mod file contains details of dependency
- Before Go Modules, there were community driven dependency management system available like dep, glide, vendor etc.

github.com/myuser/myapp

```
| - main.go
| - go.mod
| - go.sum
| - pkg1
|   | - pkg1.go
| - pkg2
|   | - pkg2.go
```

myapp/go.mod

```
github.com/sirupsen/logrus v1.5.0
github.com/satori/go.uuid v1.2.0
github.com/lib/pq v1.7.0
```

github.com/sirupsen/logrus
(v1.6.0, v1.5.0 ..)

github.com/satori/go.uuid
(v1.2.0, v1.1.0 ..)

github.com/lib/pq
(v1.7.0, v1.6.0 ..)

Introduction - Semantic Versioning

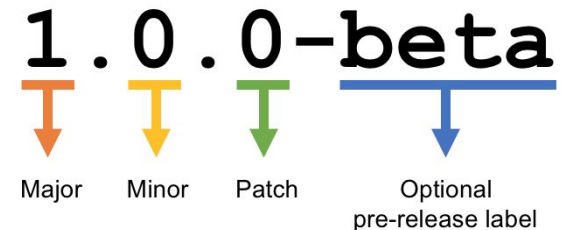
- It is a versioning system. It define version in three components,

MAJOR.MINOR.PATCH

- Given a version number MAJOR.MINOR.PATCH, increment the:
 - **MAJOR** version when you make incompatible API changes
 - **MINOR** version when you add functionality in a backwards compatible manner
 - **PATCH** version when you make backwards compatible bug fixes
- Go uses same with “v” prefix for Major → **vMAJOR.MINOR.PATCH**

Initial experimental version released	0.1.0
Bug fixed on experimental version	0.1.1 0.1.2
Second experimental version released (this can contains incompatible changes)	0.2.0 0.3.0
First stable version released	1.0.0
Bug fixed on 1.0.0	1.0.1 1.0.2
New functionality added (backward compatible)	1.1.0 1.2.0
Made incompatible changes	2.0.0 3.0.0

1 . 0 . 0 - beta



Major Minor Patch Optional pre-release label

Demo - “module-demo” v0.0.0 / v1.0.0 / v1.0.1

Step-1

```
module-app  
  
go.mod  
- module-demo v0.0.0
```

```
module-demo (v0.0.0) [commit link]  
  
UserName(firstName, lastName) string
```

We are just trying out basic impl of UserName() func in “module-demo” with v0.0.0

Step-2

```
module-app [commit link]  
  
go.mod  
- module-demo v1.0.0
```

```
module-demo (v1.0.0) [tag link]  
  
UserName(firstName, lastName) string
```

We are done with impl of UserName() func and released “module-demo” with v1.0.0

Step-3

```
module-app  
  
go.mod  
- module-demo v1.0.1
```

```
module-demo (v1.0.1)  
  
UserName(firstName, lastName) string
```

We found some bug where extra space not removed, we fixed it with v1.0.1

Demo - “module-demo” v1.1.0 / v2.0.0 / “module-app” migrate

Step-4

module-app [[commit link](#)]

```
go.mod
- module-demo v1.1.0
```

module-demo (v1.1.0) [[tag link](#)]

```
UserName(firstName, lastName) string
GeneratePassword() string
```

We have added new GeneratePassword() func with v1.1.0

Step-5

module-app [[commit link](#)]

```
go.mod
- module-demo v1.1.0
- module-demo v2.0.0
```

module-demo (v2.0.0) [[tag link](#)]

```
UserName(firstName, lastName, middleName) string
GeneratePassword() string
GenerateEmail(userName) string
```

We have added GenerateEmail() func and made incompatible change in UserName() with v2.0.0

Step-6

module-app [[commit link](#)]

```
go.mod
- module-demo v2.0.0
```

module-demo (v2.0.0)

```
UserName(firstName, lastName, middleName) string
GeneratePassword() string
GenerateEmail(userName) string
```

We have migrated “module-app” to use only “module-demo” v2.0.0

References

- go mod init
- go mod tidy
- go list -m all
- go list -m -versions github.com/nurali-techie/module-demo
- go get github.com/nurali-techie/module-demo@v1.1.0
- go mod why github.com/nurali-techie/module-demo
- Demo code: module-demo - <https://github.com/nurali-techie/module-demo>
- Demo code: module-app - <https://github.com/nurali-techie/module-app>
- Blog: Using Go Modules - <https://blog.golang.org/using-go-modules>
- Talk: EVERYTHING You SHOULD know about Go Modules [link](#)
- Talk: Opening keynote: Go with Versions - GopherConSG 2018 by Russ Cox [link](#)
- My Talks: <https://github.com/nurali-techie/meetup-golang>

Thank you

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