

Go with Gradle

June 2017

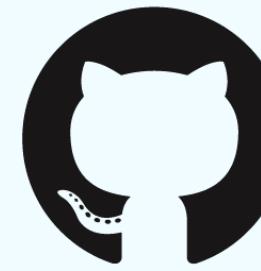
About Me



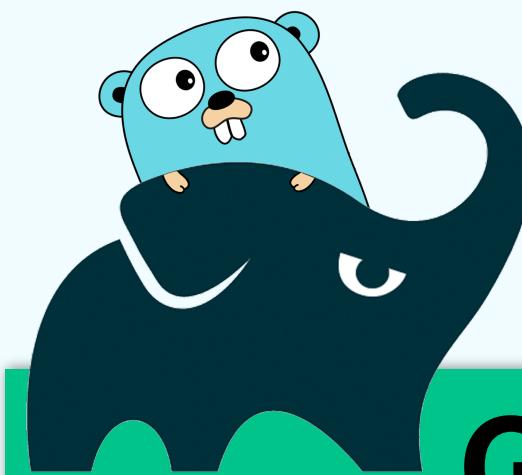
Bo Zhang

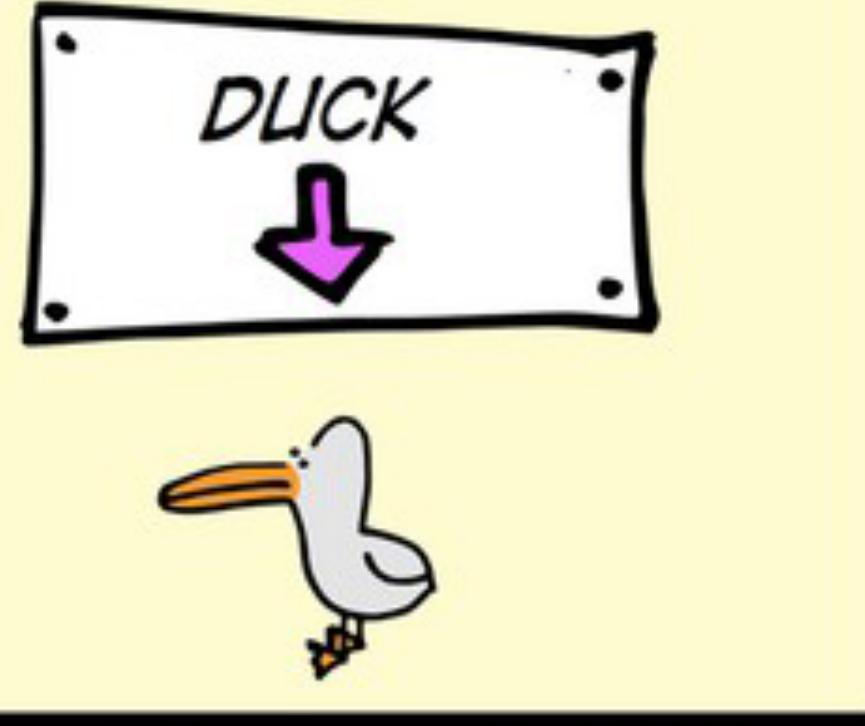


Worked in Alibaba

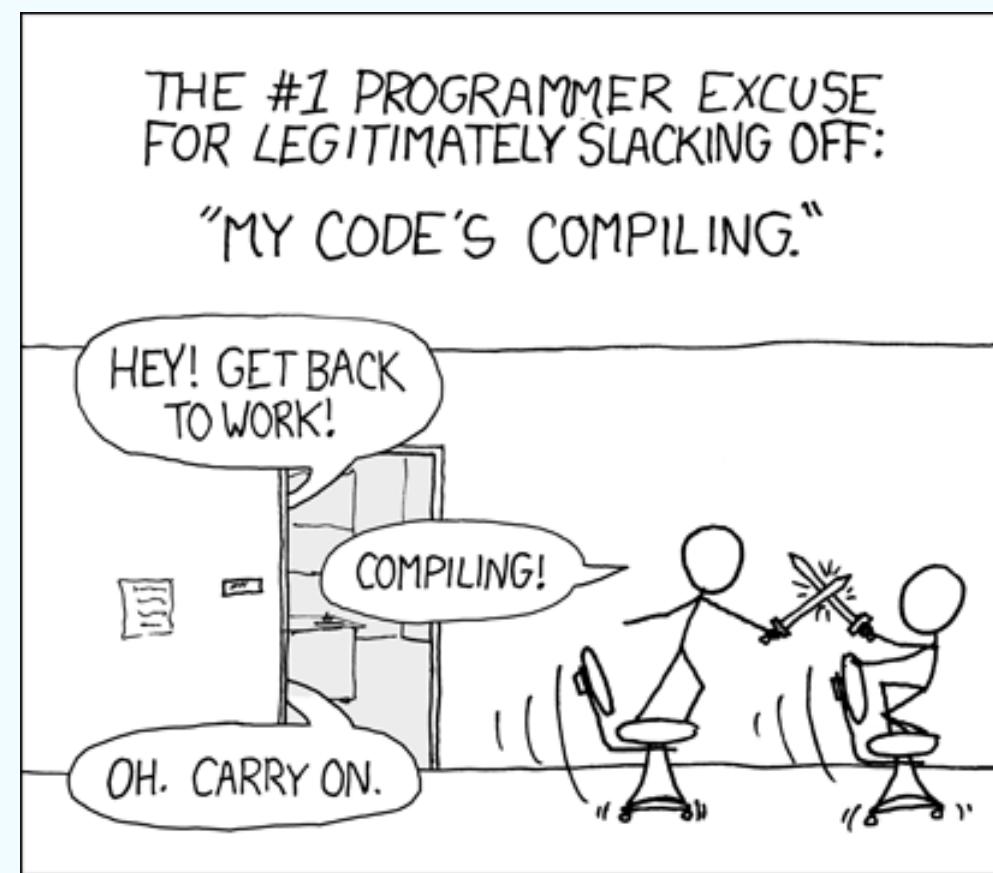


<https://github.com/blindpirate>





static typed



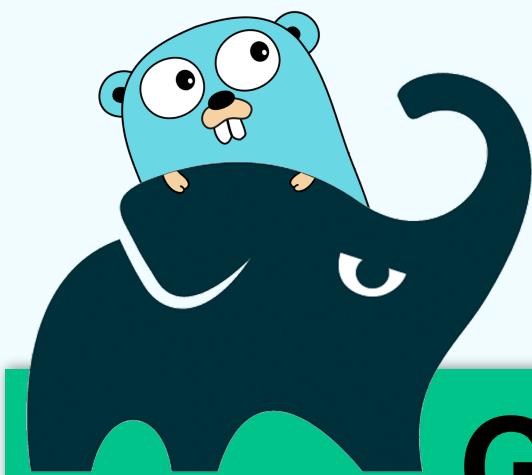
compiled



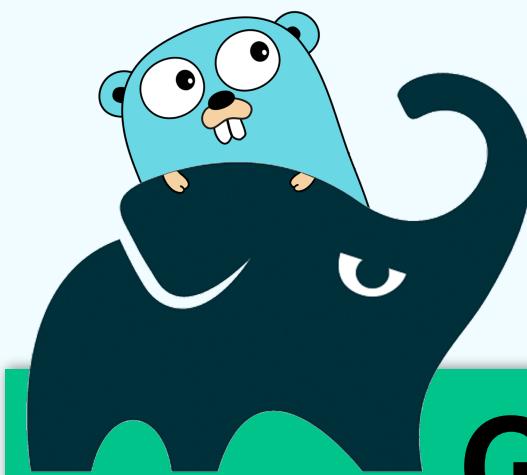
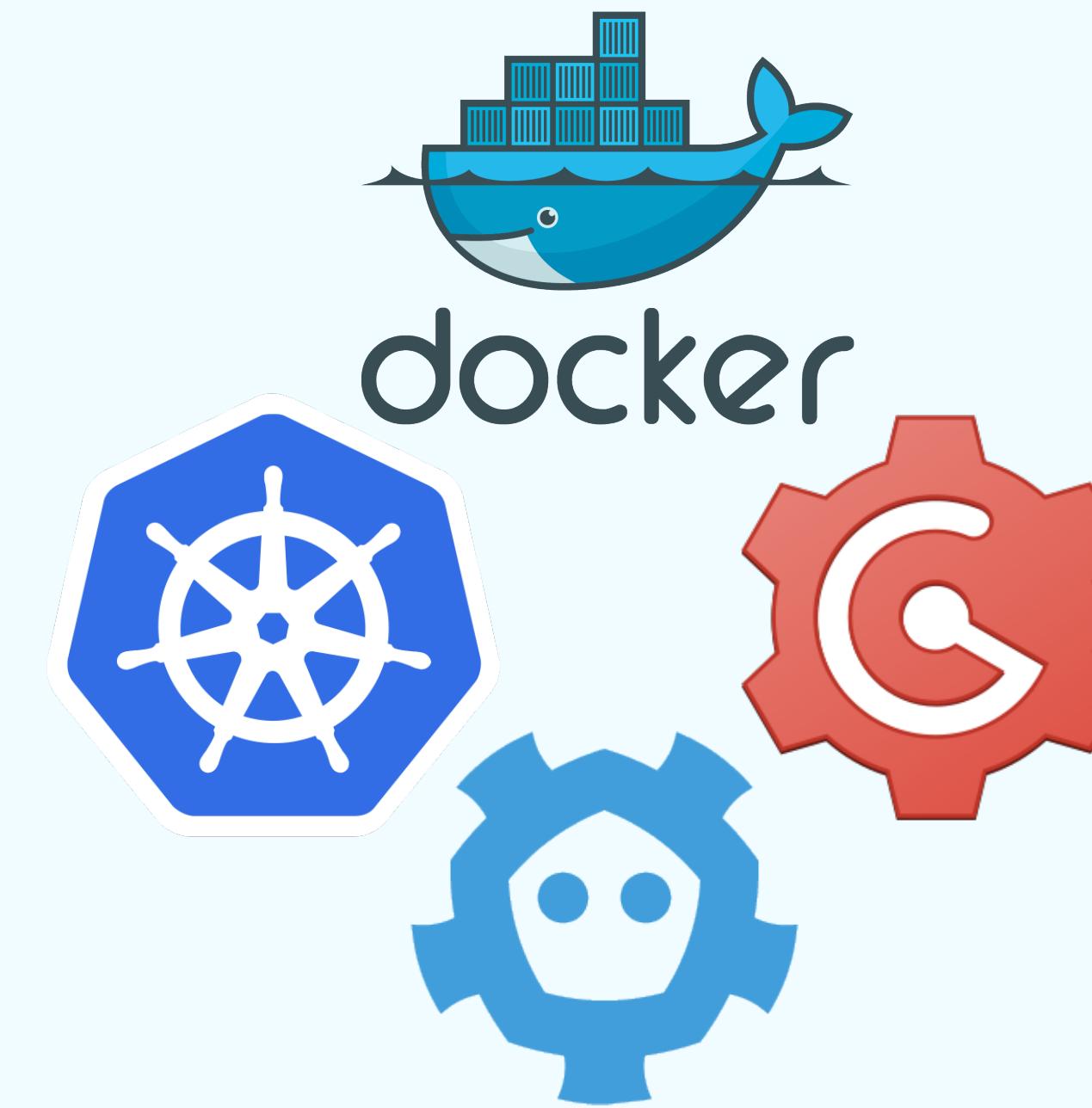
concurrency

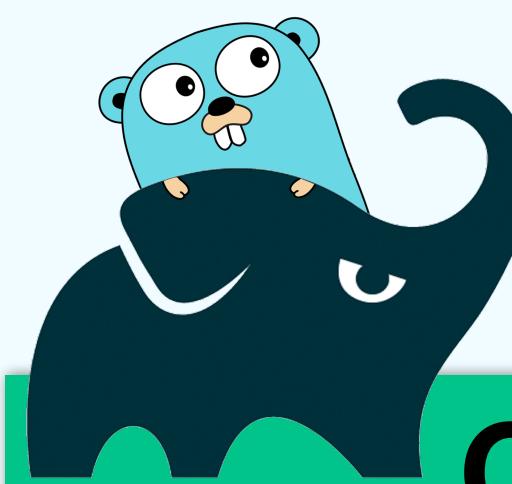
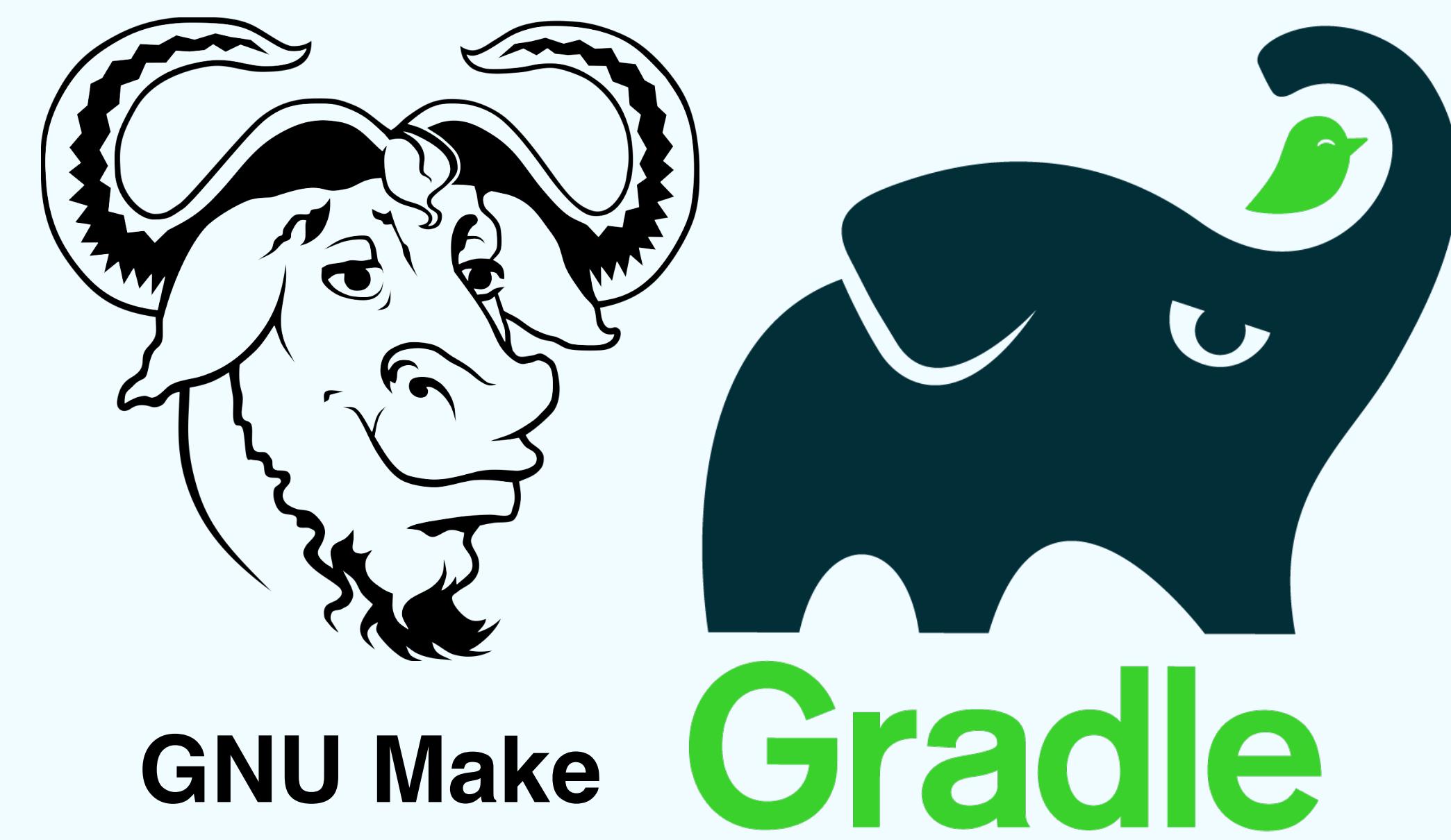


garbage collection

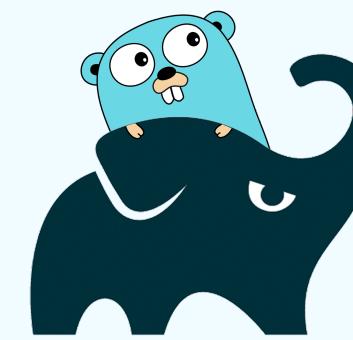


What is Go





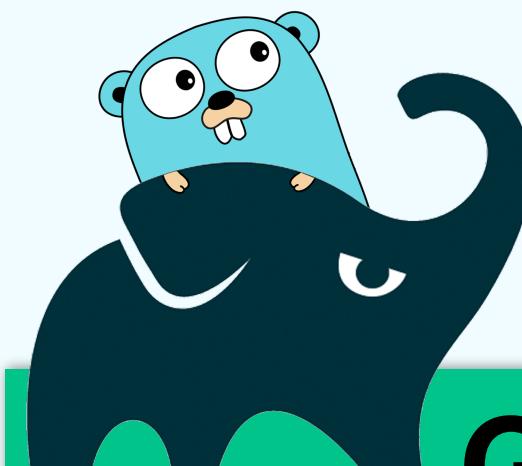
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Gogradle

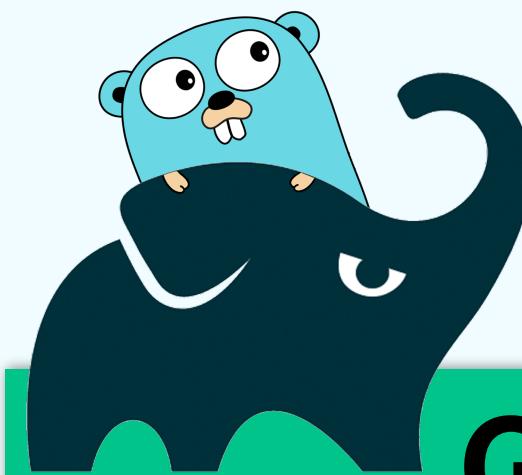
```
plugins {  
    id 'com.github.blindpirate.gogradle' version '0.6.2'  
}  
  
golang {  
    packagePath = 'github.com/my/package'  
}
```

 build.gradle





Distribution Management

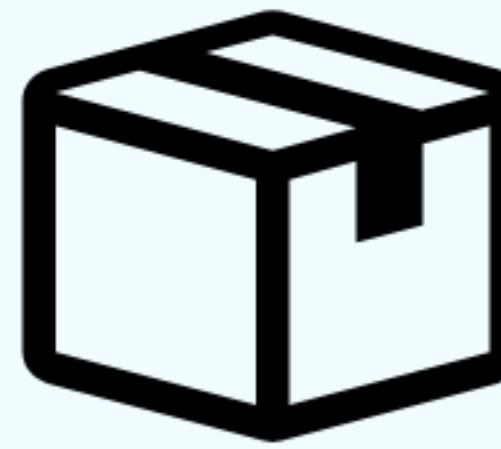


Manage Go Version

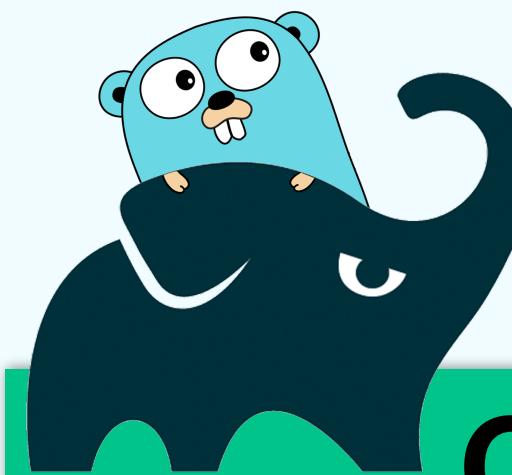
```
golang {  
    goVersion = '1.8.3'  
}
```

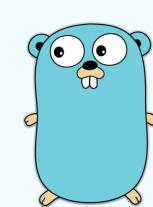
 build.gradle





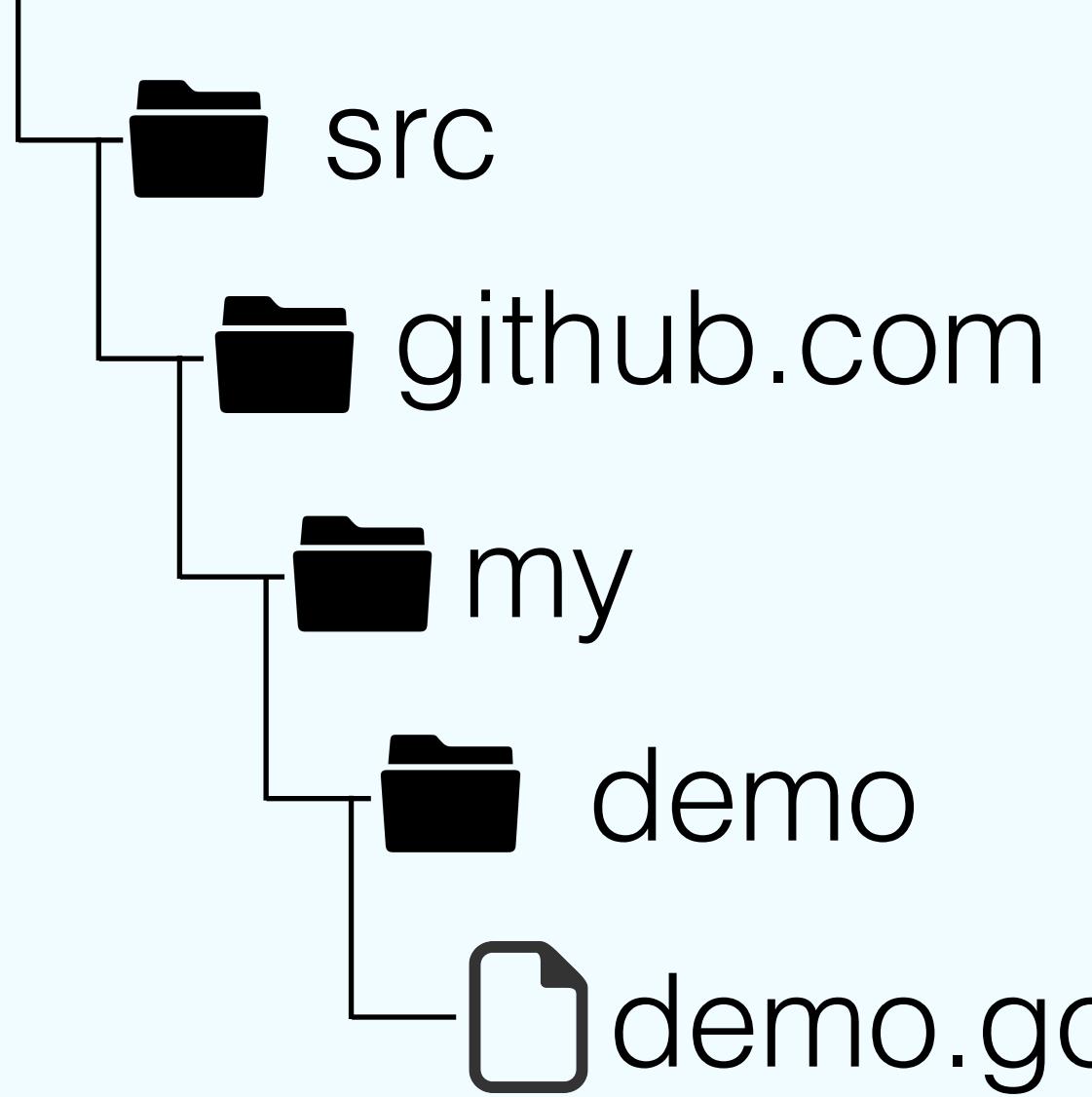
Package Management



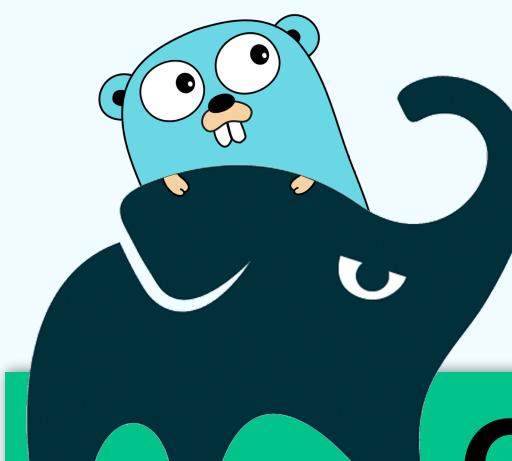


GOPATH

/Users/official/project:/Users/my/project

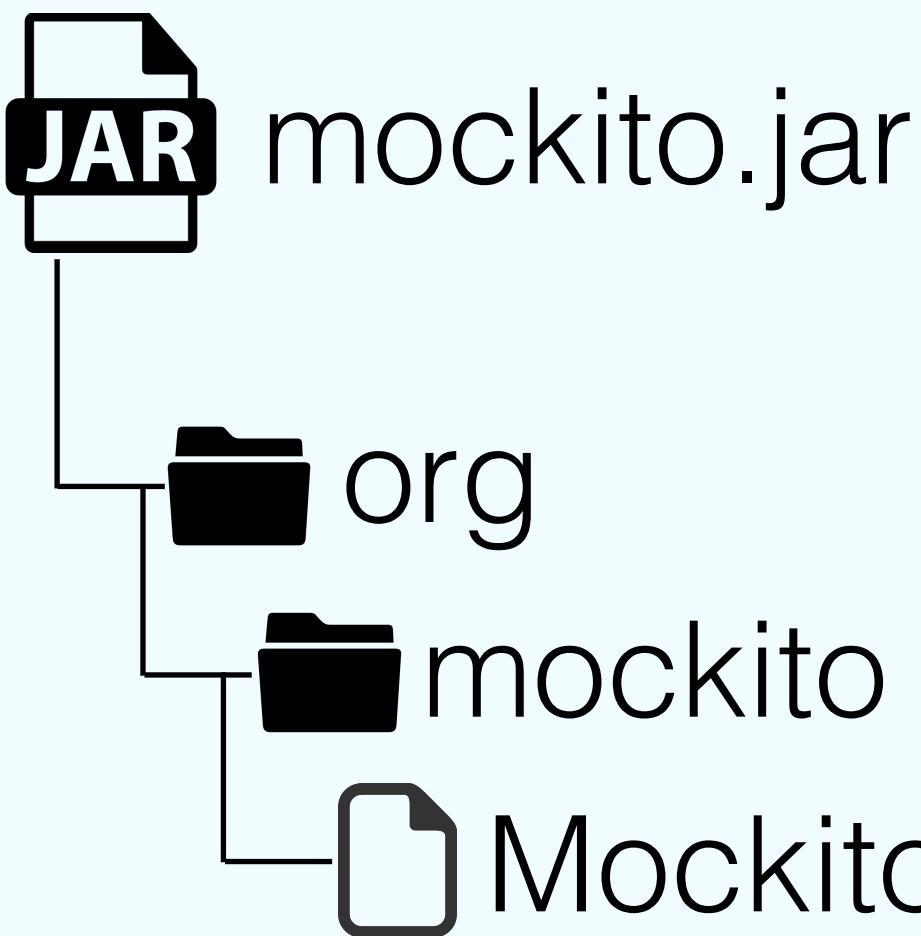


```
package demo;  
  
import "github.com/another/package"
```



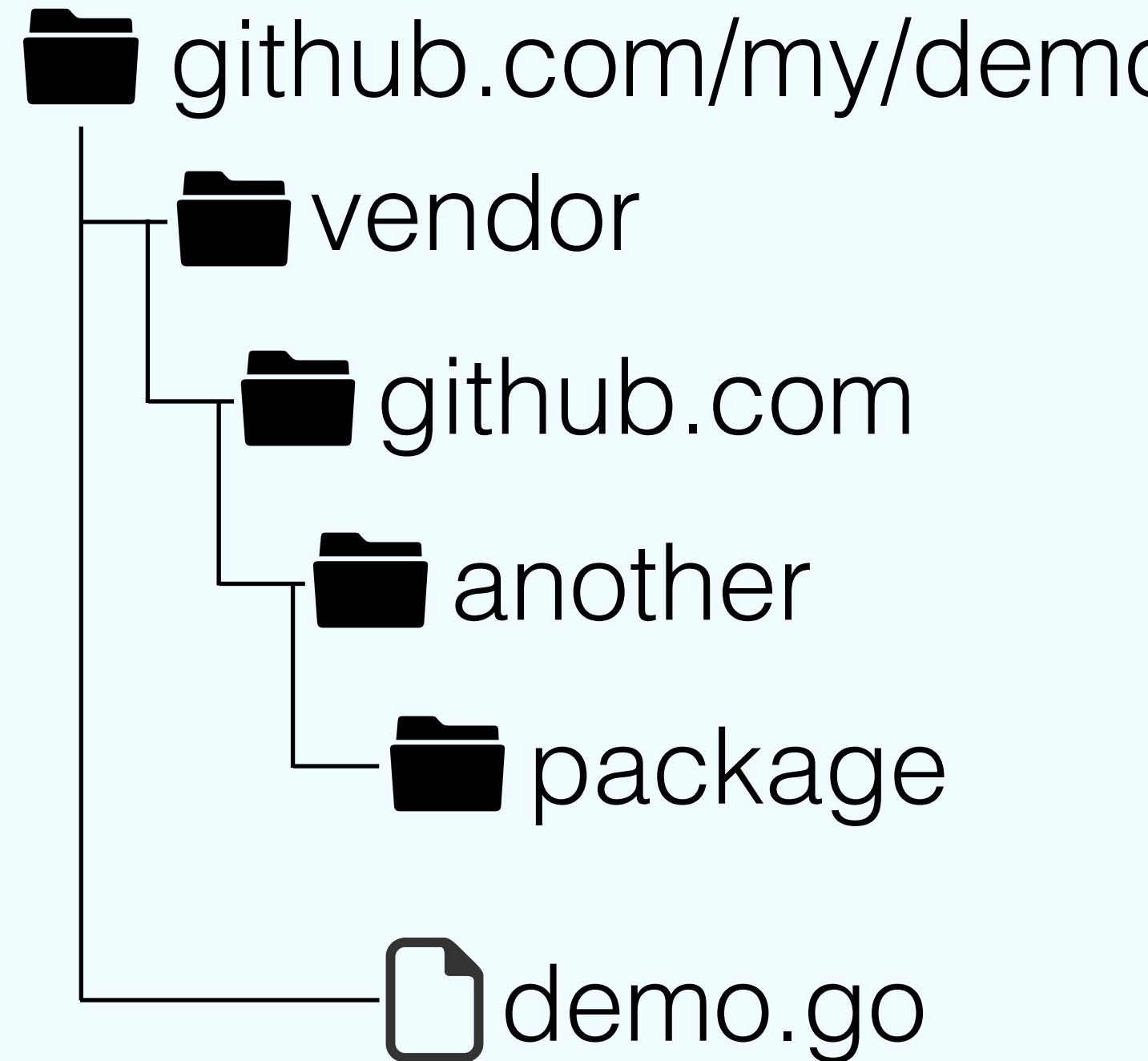
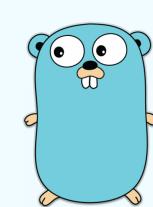
CLASSPATH

./mockito-core.jar:./slf4j-api.jar

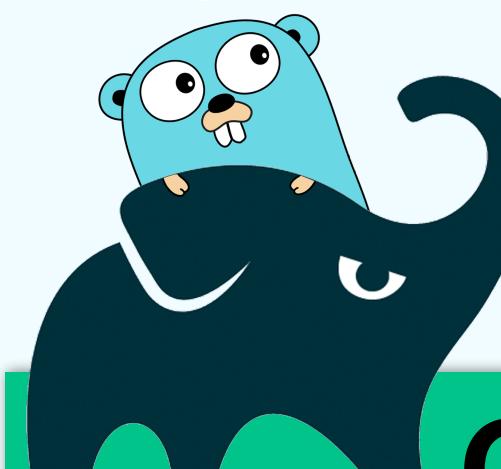


```
package org.mockito;  
  
import org.mockito.stubbing.Answer;  
  
public class Mockito {
```

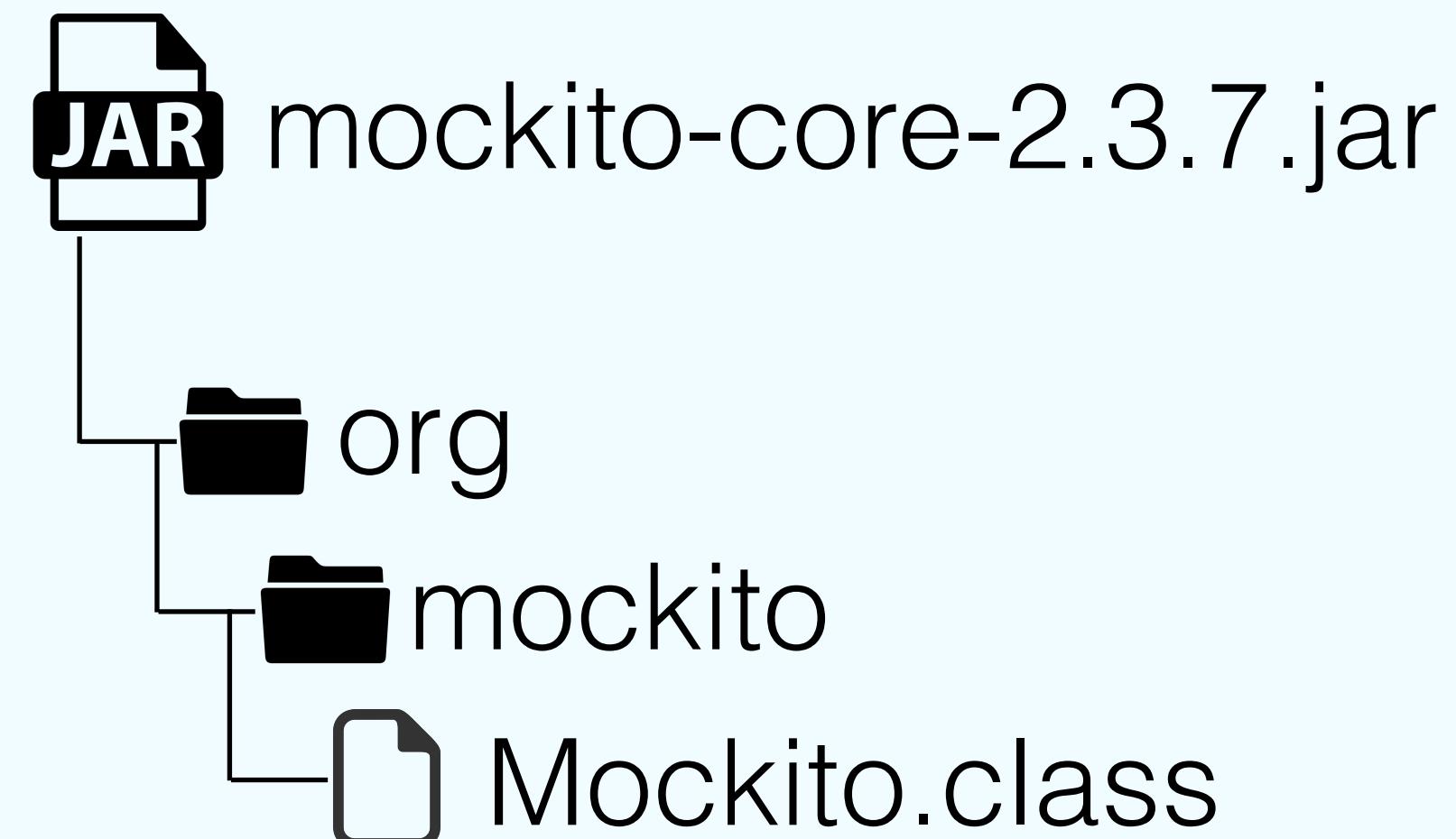




```
package demo;  
  
import "github.com/another/package"
```



java -cp ~/.m2/.../mockito-core-2.3.7.jar



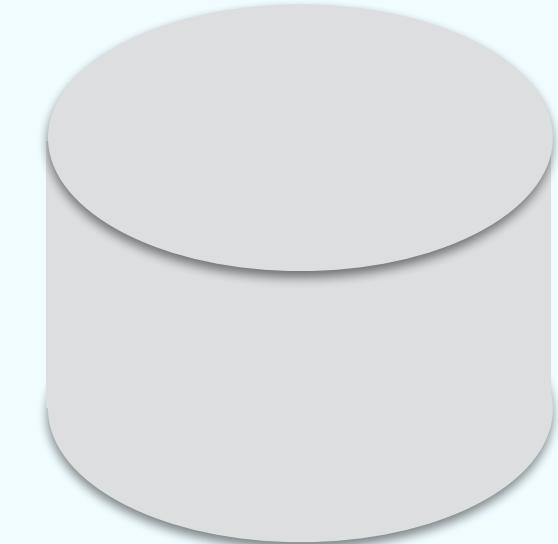
```
package org.mockito;  
  
import org.mockito.stubbing.Answer;  
  
public class Mockito {
```



In Java, we...



HEY, GIVE ME
ORGANTLR:ANTLR4:4.7!



Repository

HERE YOU ARE!

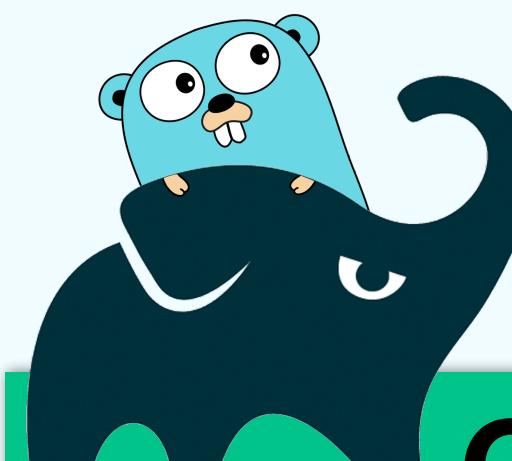


IT DEPENDS ON ...

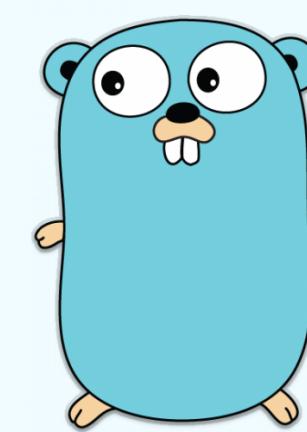
org.antlr:ST4:4.0.8

org.glassfish:javax.json:1.0.4

...



But in Go, there's no repository...



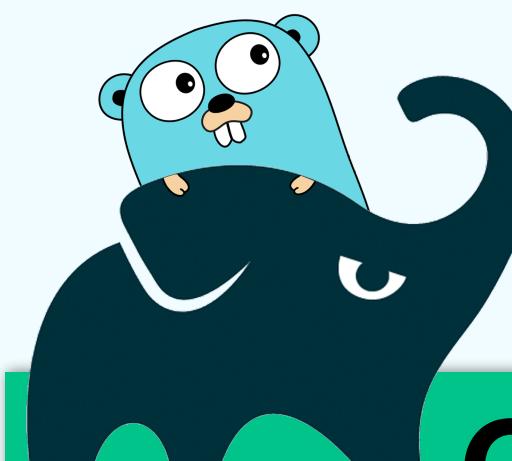
HEY, I WANT PACKAGE
"k8s.io/kubernetes"

<https://k8s.io/kubernetes?go-get=1>

OK, JUST GO TO

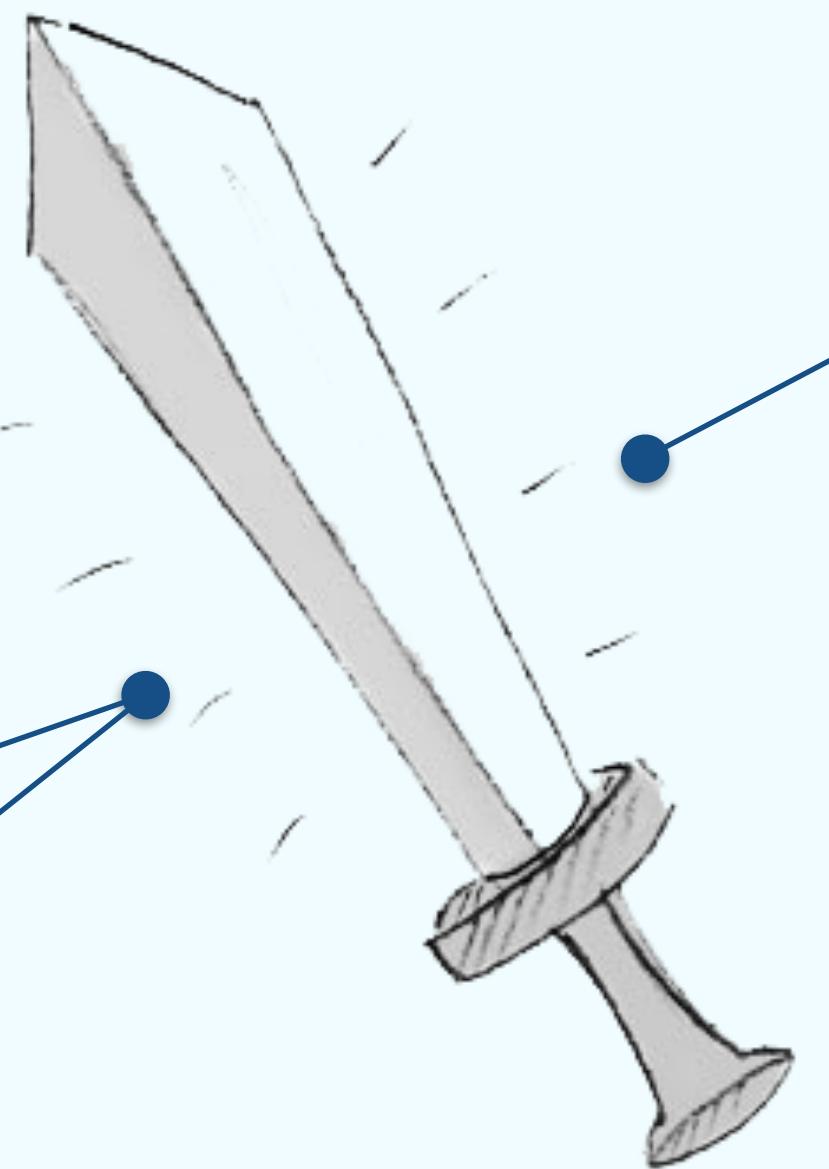
"<https://github.com/kubernetes/kubernetes>"

git clone <https://github.com/kubernetes/kubernetes>

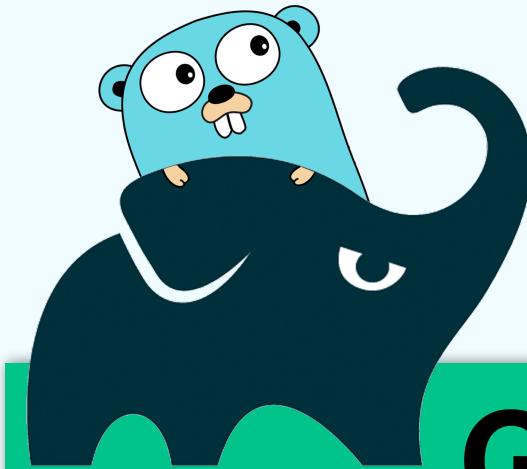


No transitive dependency information

No mirror repo, no custom package

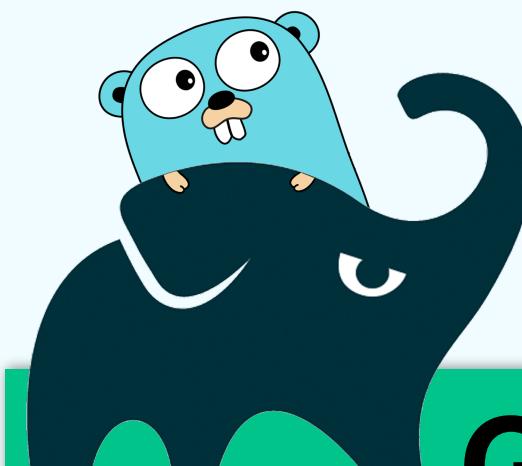


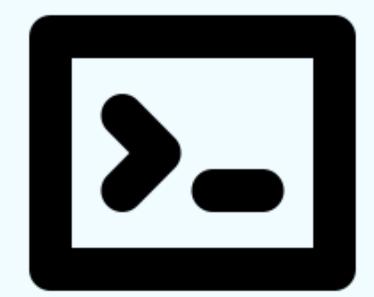
No need to maintain a repository



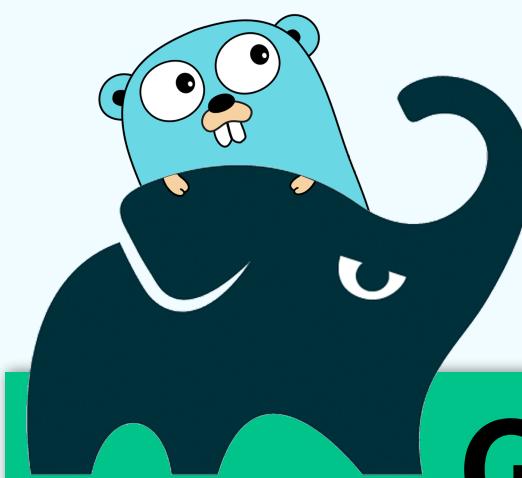
An Incomplete List of Go Package Management Tools

Name	Config File
godep	Godeps/Godeps.json
govendor	vendor/vendor.json
gopm	.gopmfile
gvt	vendor/manifest
gvend	vendor.yml
glide	glide.yaml
trash	vendor.conf
gom	Gomfile
bunch	bunchfile
goop	Goopfile
glock	GLOCKFILE
...	...

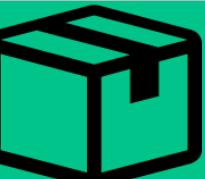




gradle init

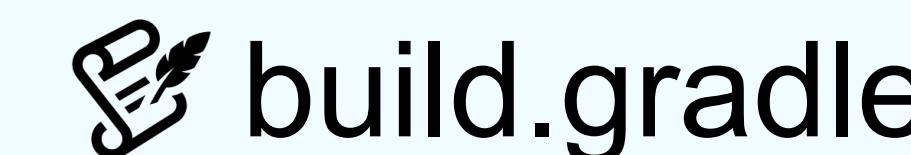
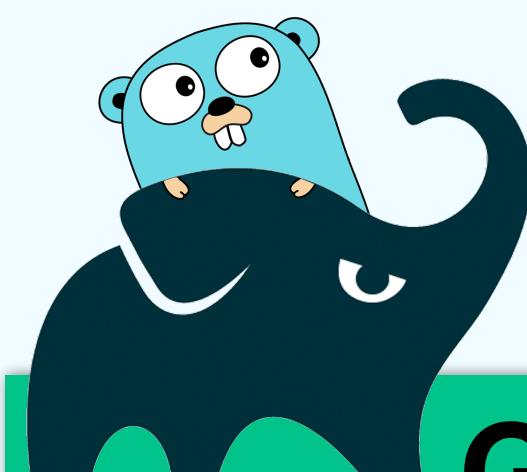


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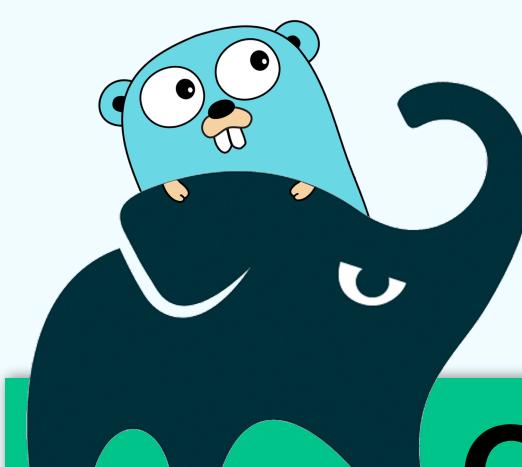
Declare Dependencies

```
dependencies {  
    golang {  
        build 'github.com/my/project' // latest version  
        build name:'github.com/my/project'  
  
        build 'github.com/my/project@1.0.0-RELEASE' // Specify a tag  
        build name:'github.com/user/project', tag:'1.0.0-RELEASE'  
  
        test 'github.com/my/project#d3fbe10' // Specify a commit  
        test name:'github.com/user/project', commit:'d3fbe10'  
        test name:'github.com/user/project', version:'d3fbe10'  
  
        build 'github.com/user/project@1.*'  
        build 'github.com/user/project@1.x'  
        build 'github.com/user/project@1.X'  
        build 'github.com/user/project@~1.5'  
        build 'github.com/user/project@1.0-2.0'  
        build 'github.com/user/project@^0.2.3'  
        build 'github.com/user/project@!(1.x)'  
        build 'github.com/user/project@ ~1.3 | (1.4.* & !=1.4.5) | ~2'  
    }  
}
```

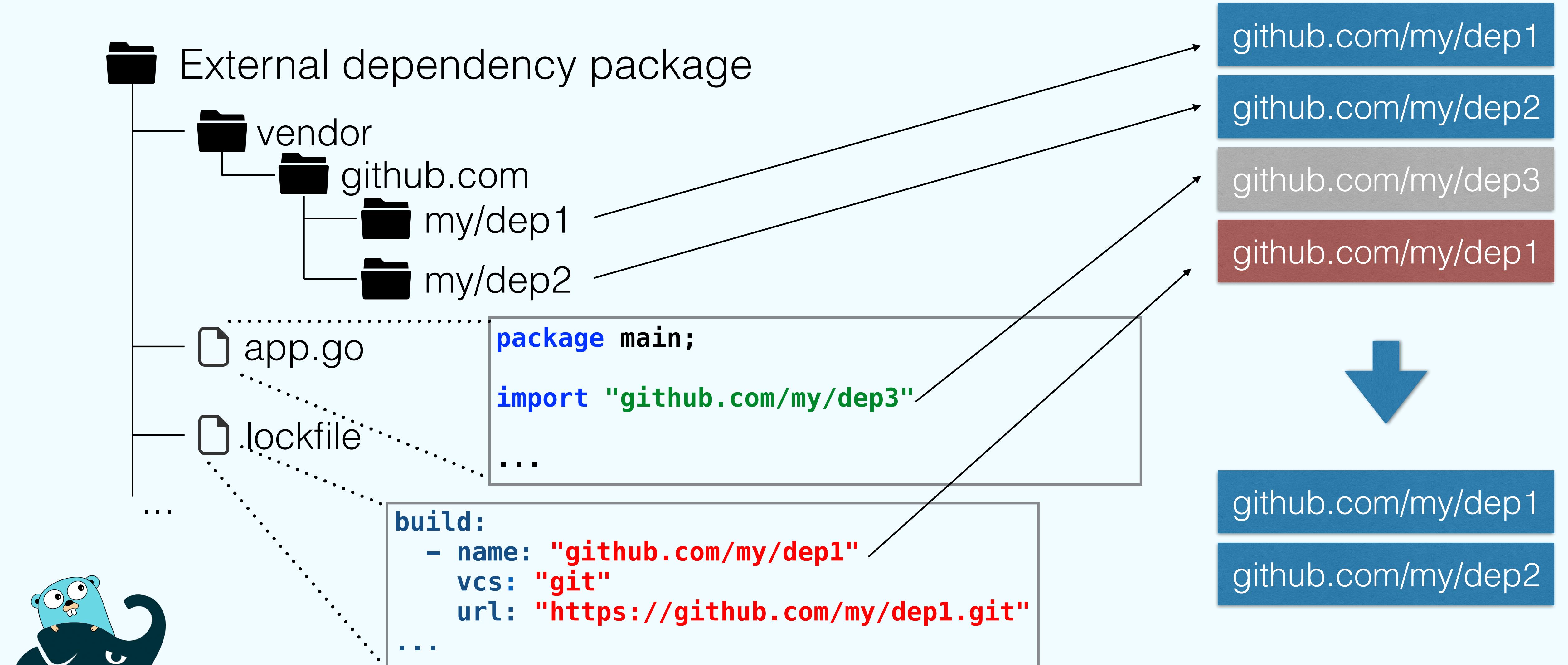


```
dependencies {  
    golang {  
        build name: 'github.com/user/project', url:'https://github.com/user/project.git', tag:'v1.0.0'  
        build name: 'github.com/user/project', url:'git@github.com:user/project.git', tag:'v2.0.0'  
  
        build 'github.com/a/b@1.0.0', 'github.com/c/d@2.0.0', 'github.com/e/f#commitId'  
        build([name: 'github.com/g/h', version: '2.5',  
               [name: 'github.com/i/j', commit: 'commitId'])  
  
        build('github.com/user/project') {  
            transitive = false  
        }  
        build('github.com/a/b') {  
            exclude name:'github.com/c/d'  
            exclude name:'github.com/c/d', tag: 'v1.0.0'  
        }  
  
        build name: 'a/local/package', dir: 'path/to/local/package'  
    }  
}
```

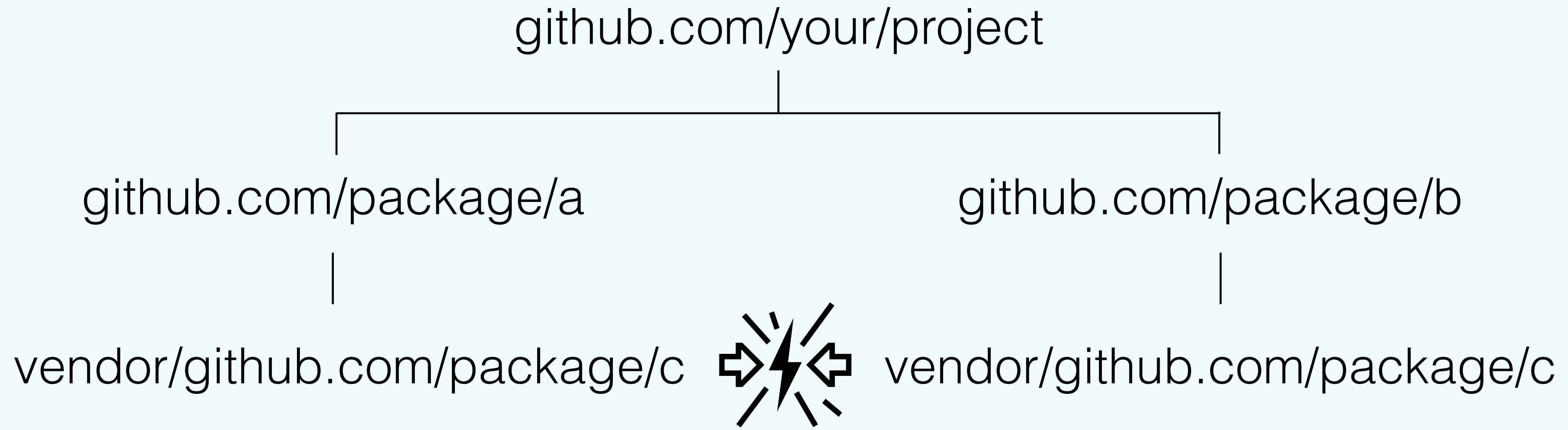
 build.gradle



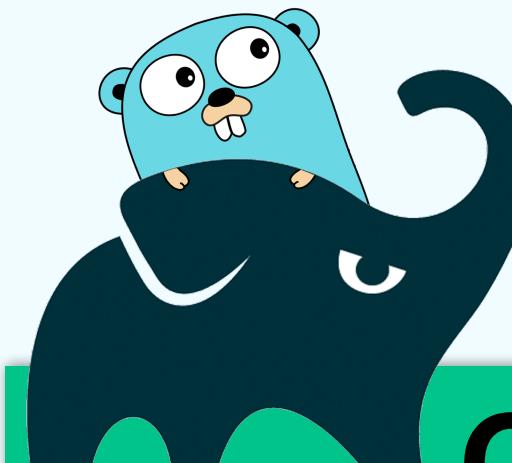
Transitive Dependencies

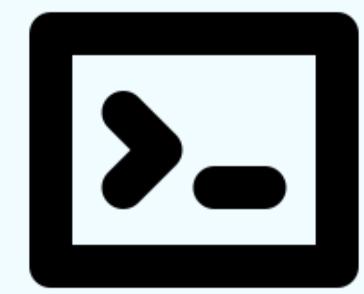


Conflict Resolution

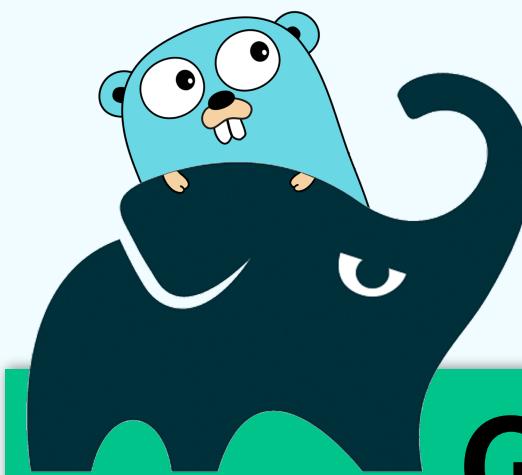


- 1. First level always wins**
- 2. Newer wins**



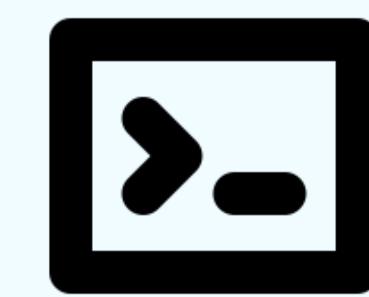


gradle dependencies

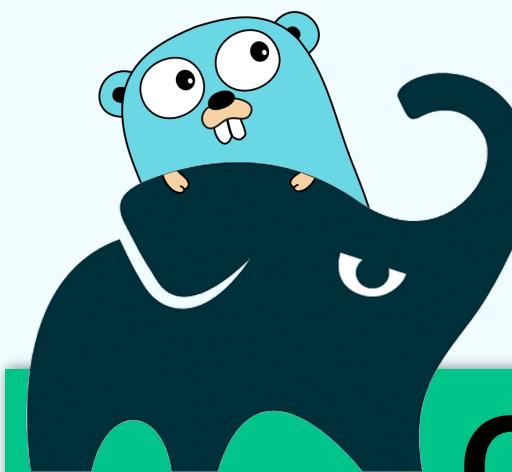


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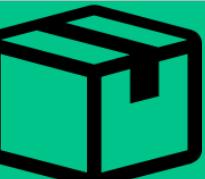




gradle vendor



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Lockfile in Gogradle

github.com/my/package

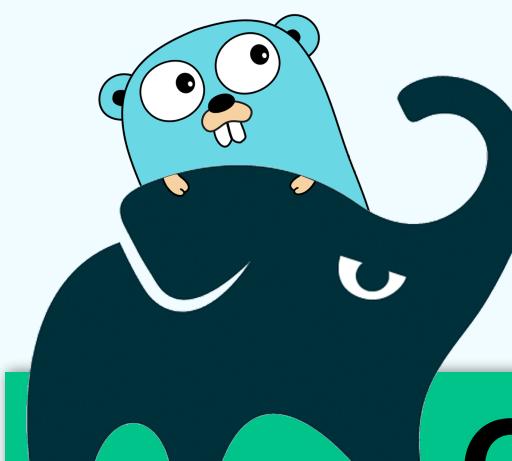
 github.com/my/dep1#commit1 (from http://my-fork.git)

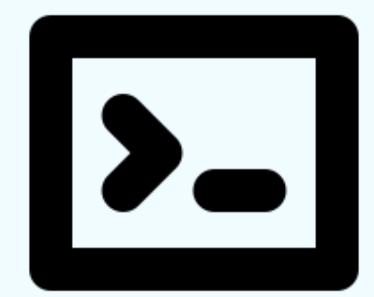
 github.com/my/dep2#commit2

 github.com/my/dep3 (in vendor)

 gogradle.lock

```
- name: github.com/my/dep1
  version: commit1
  url: http://my-fork.git
- name: github.com/my/dep2
  version: commit2
- name: github.com/my/dep3
  vendorPath: vendor/github.com/my/dep3
  host:
    - name: github.com/my/dep2
      version: commit2
```



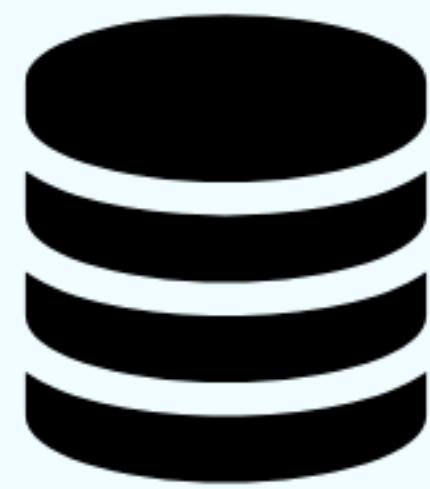


gradle lock

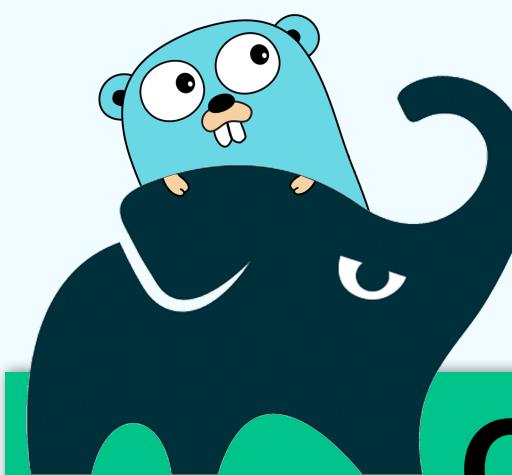


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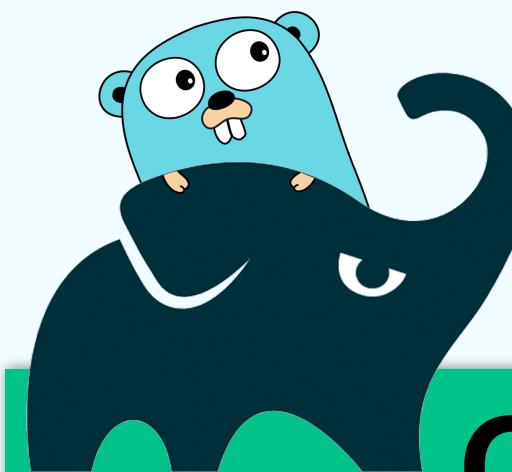
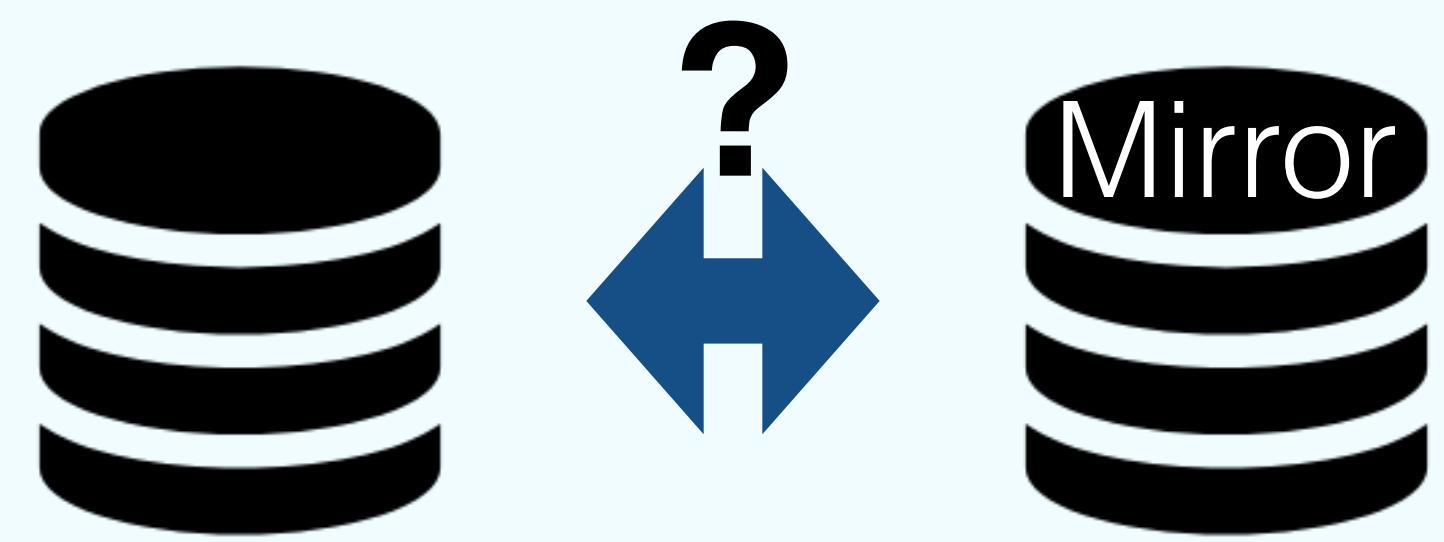




Repository Management



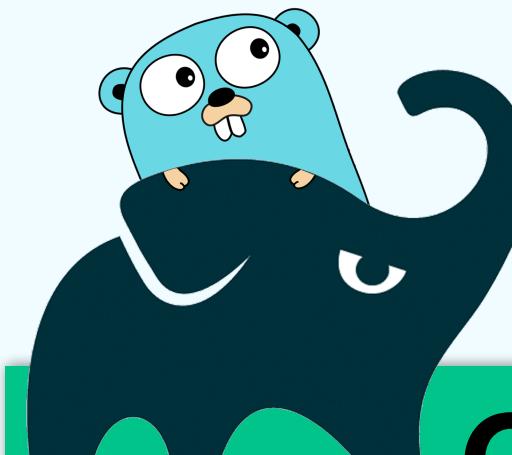
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Substitute Repositories

```
repositories {  
    golang {  
        root ~/github\.com\/\w+\/\w+/  
        vcs 'git' // git by default  
        url { path ->  
            def split = path.split('/')  
            "https://my-mirror.com/${split[1]}/${split[2]}"  
        }  
    }  
}
```

build.gradle



Ignore Packages

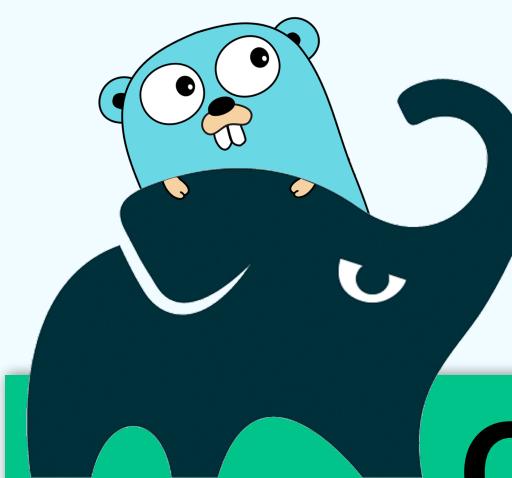
```
repositories {  
    golang {  
        root 'appengine'  
        emptyDir()  
    }  
}
```

build.gradle

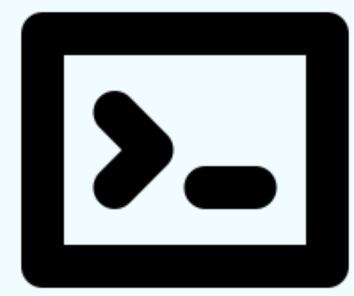




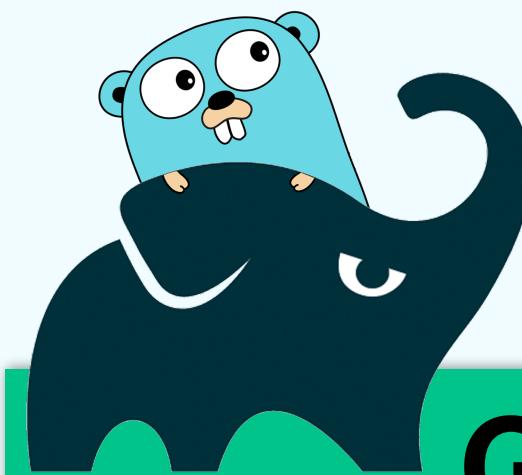
Build



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gradle build



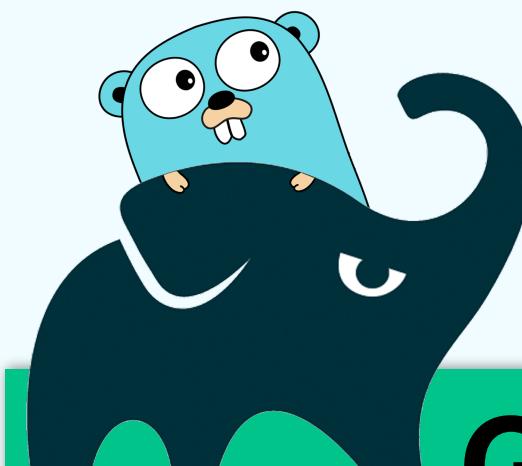
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Configure Build

```
build {
    doLast {
        go 'build -o ./gogradle/${GOOS}_${GOARCH}_${PROJECT_NAME}'
github.com/your/project'
    }
}
```

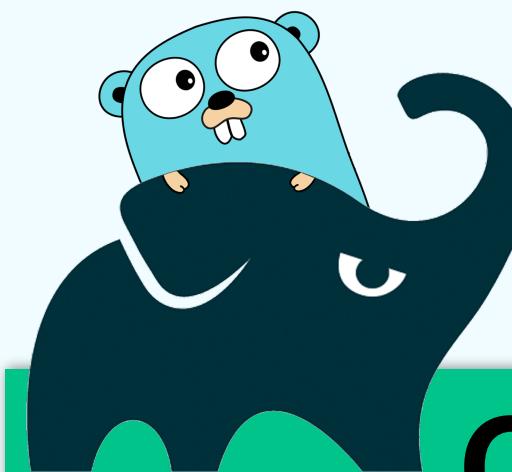
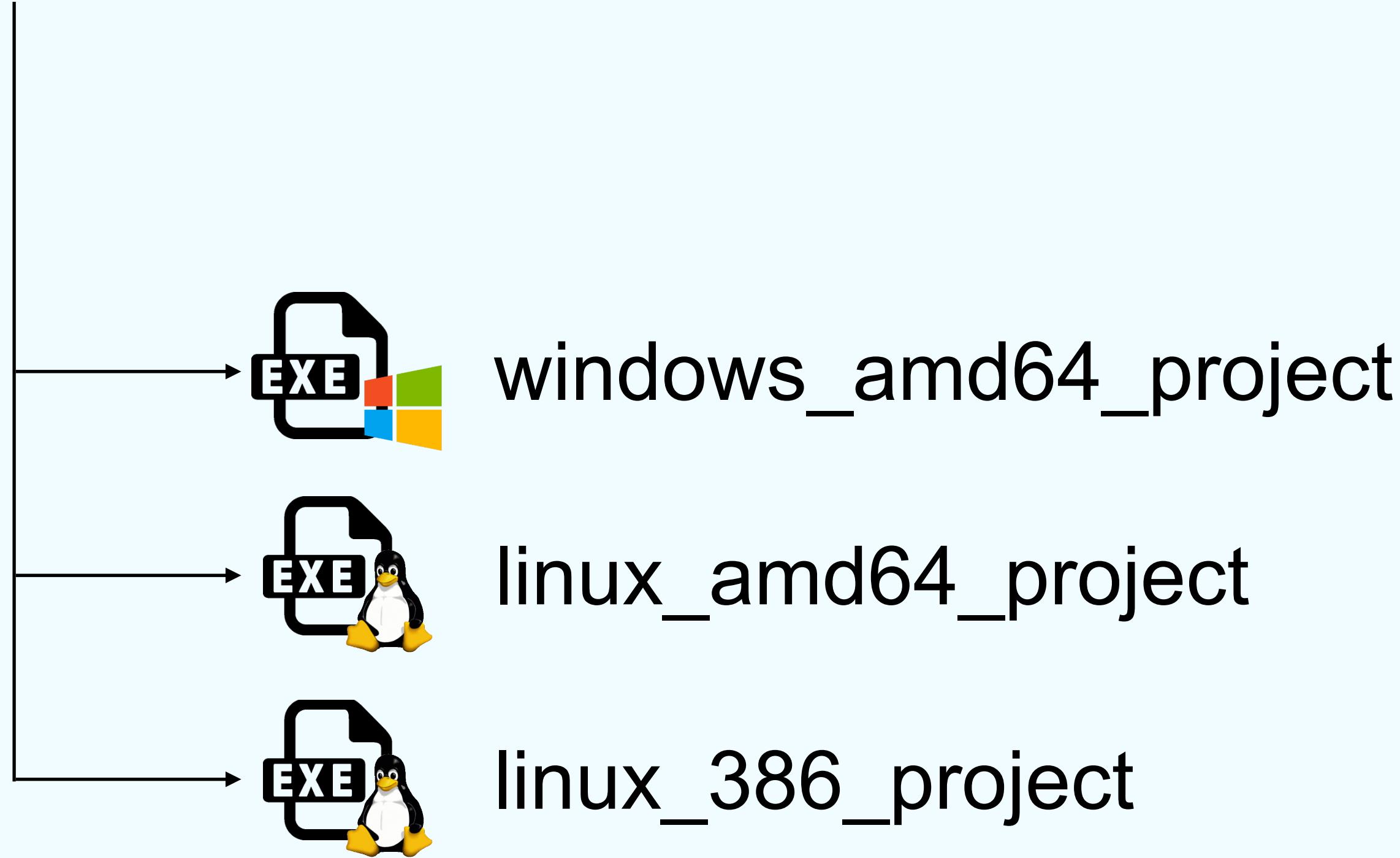
 build.gradle



Cross Compile

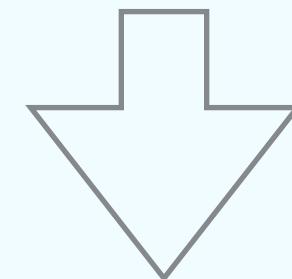
```
build {  
    targetPlatform = 'windows-amd64, linux-amd64, linux-386'  
}
```

build.gradle



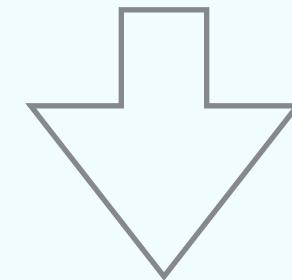
Dependency Cache

github.com/my/dep1@1.0.0



Resolve

github.com/my/dep1#4df6c100



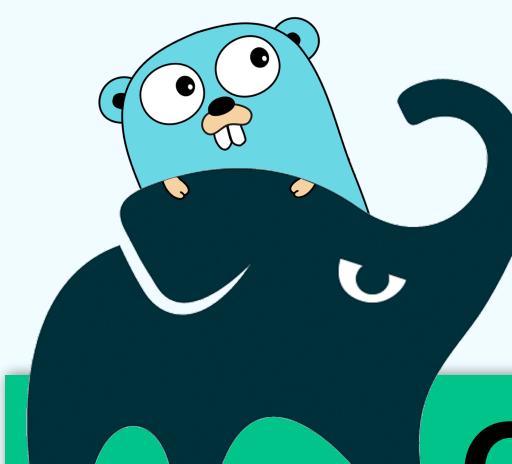
Analyze

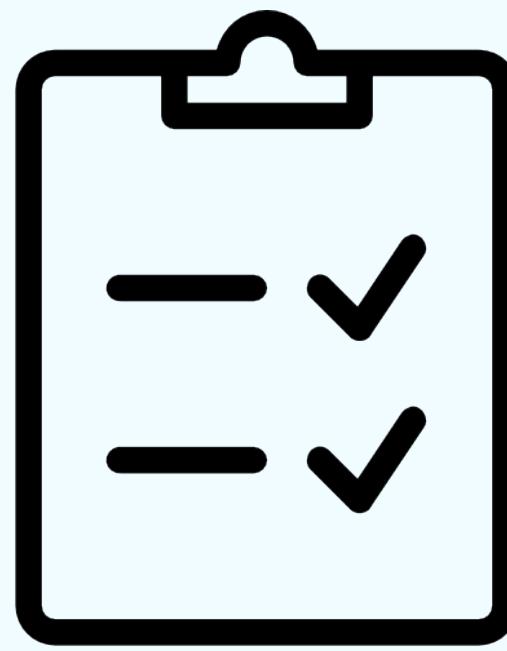
github.com/my/dep2@2.0.0
github.com/my/dep3#dae2246

...

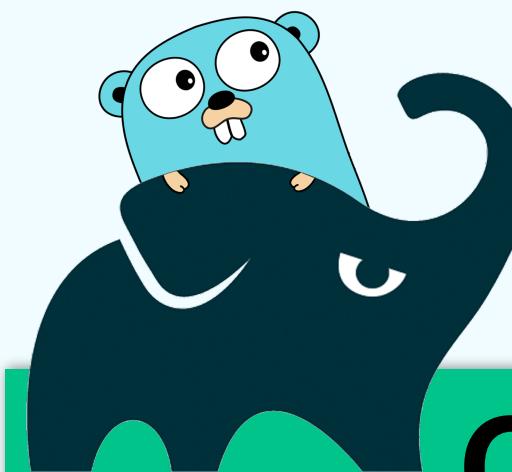
Build-scoped cache

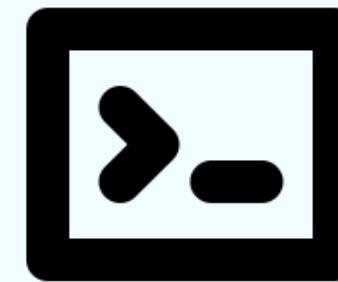
Permanent cache



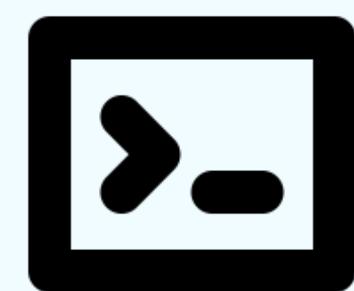


Test

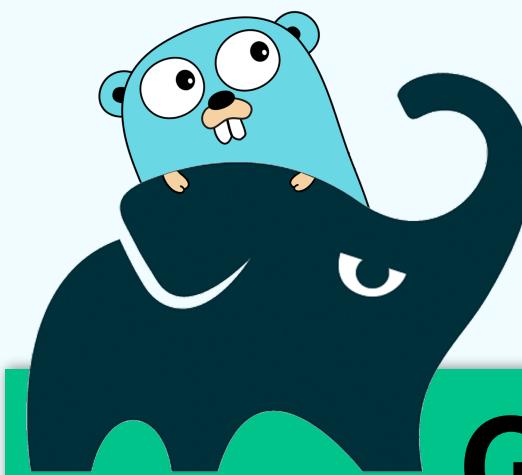




gradle test

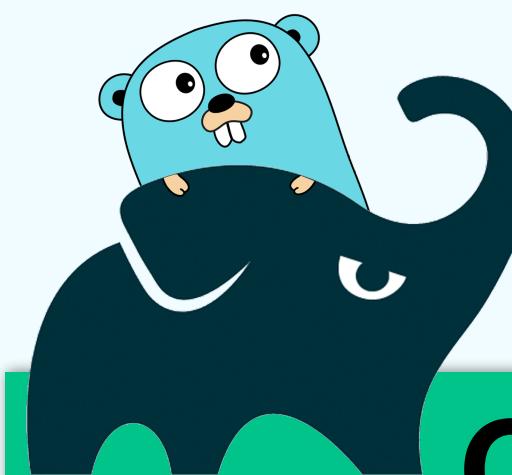


gradle test --tests app*.go

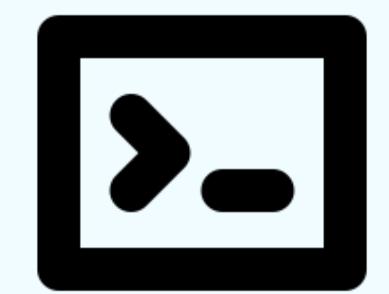




Code Quality



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gradle

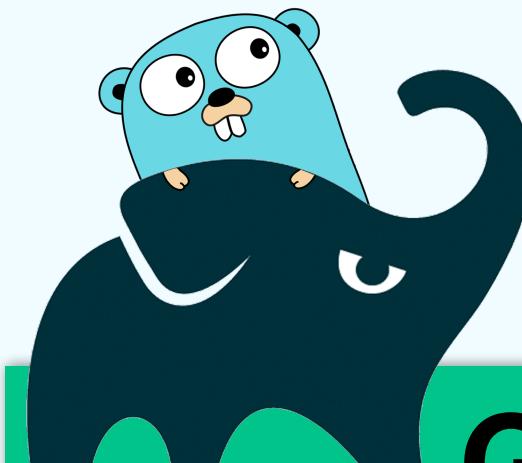
check

test

coverage

vet

fmt

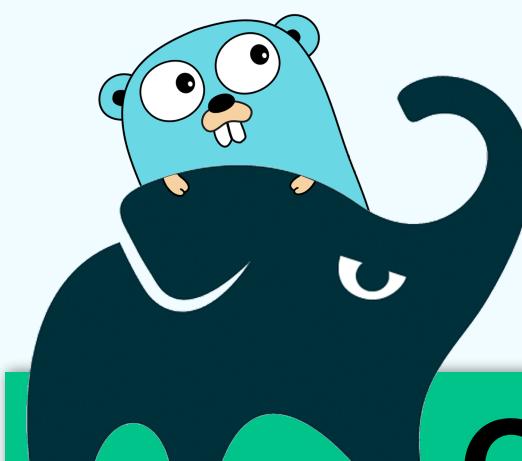


Customize Check Task

```
task golint(type: com.github.blindpirate.gogradle.Go) {
    dependsOn vendor
    continueWhenFail = true
    environment MY_OWN_ENV1: 'value1', MY_OWN_ENV1: 'value2'
    doLast {
        run 'golint github.com/my/project'
    }
}

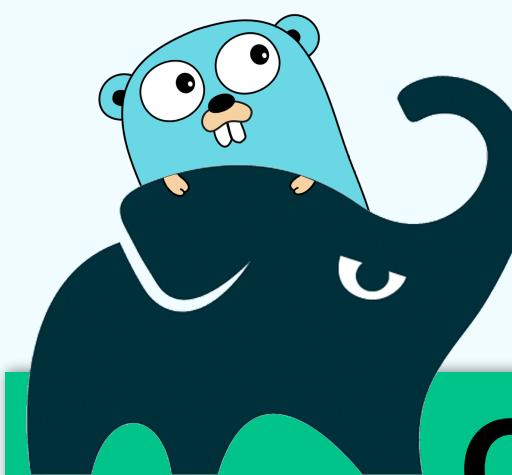
check.dependsOn golint
```

 build.gradle





IDE Integration





IntelliJ IDEA



vsCode



Gogland



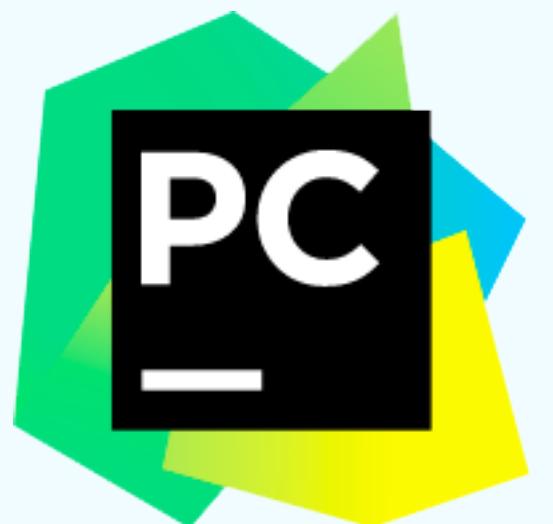
WebStorm



RubyMine



PhpStorm



PyCharm



CLion

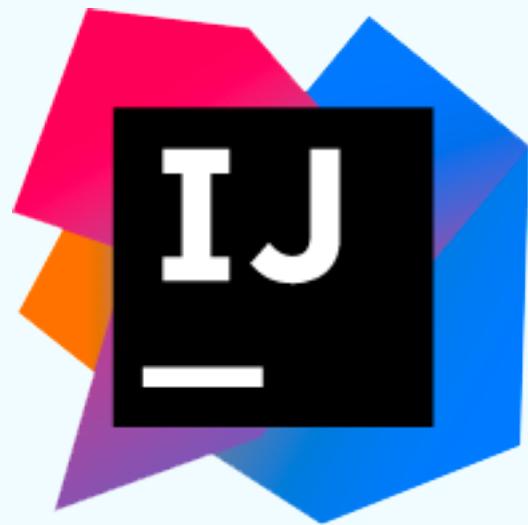


Vim

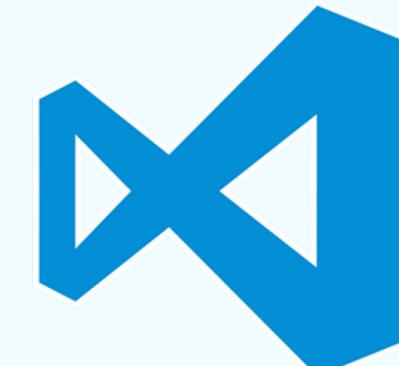


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gradle goIdea



gradle vscode



gradle gogland



gradle webStorm



gradle rubyMine



gradle phpStorm



gradle pyCharm



gradle cLion



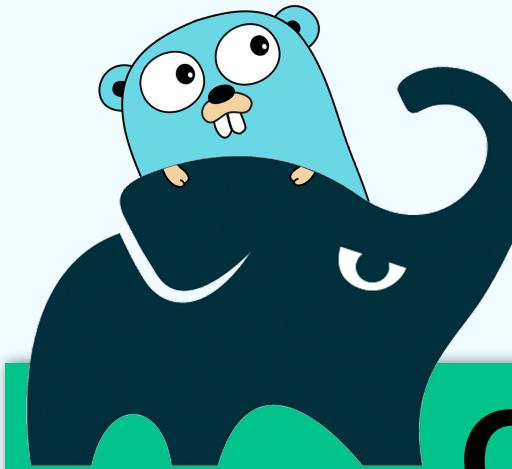
gradle showGopathGoroot



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<https://github.com/gogradle>



Thank You

Q&A

