# Gradle实践

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## 第2节Gradle快速入门

### 2.1 什么是领域特定语言DSL

Uml、matlab、xml、html、

### 2.2 groovy初探

是一种基于JVM的敏捷开发语言

结合了Python、Ruby、Smalltalk的许多强大的特性

Groovy可以与java完美结合，而且可以使用java所有的类库

思想：求转不求全，解决特定问题

语法上支持动态类型、闭包等新一代语言

面向对象、面向过程

## 第3节 开发环境搭建

### 3.1 linux下环境搭建

1）安装JDK；

2）下载Groovy SDK

$unzip apache-groovy-binary-2.4.15.zip

$yum install unzip

$sudo yum install unzip

$unzip apache-groovy-binary-2.4.15.zip

$ln -s groovy-2.4.15/ groovy

$rm -rf apache-groovy-binary-2.4.15.zip

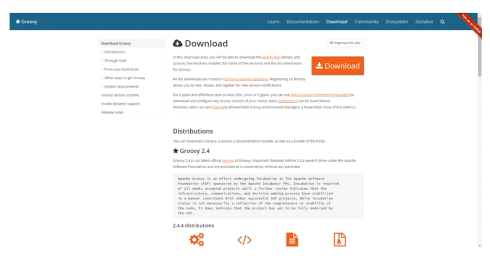
$sudo vi /etc/profile

$source /etc/profile

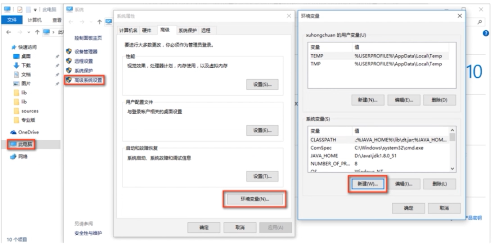
$groovy -v

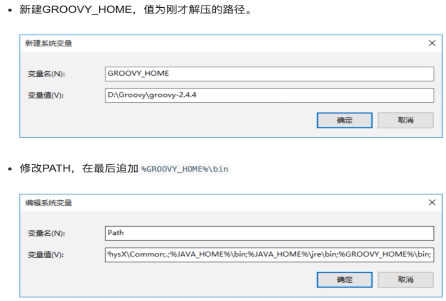
### 3.2 windows下环境搭建

1）下载Groovy SDK

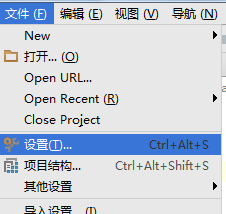


1. 配置classpath环境变量

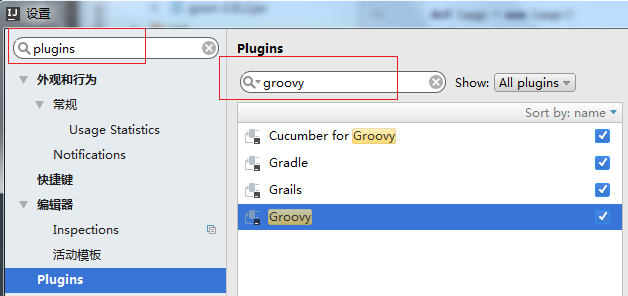




1. 在控制台输入groovy -version，校验是否正确安装
2. IntelliJ中配置groovy
3. 打开idea--preferences--

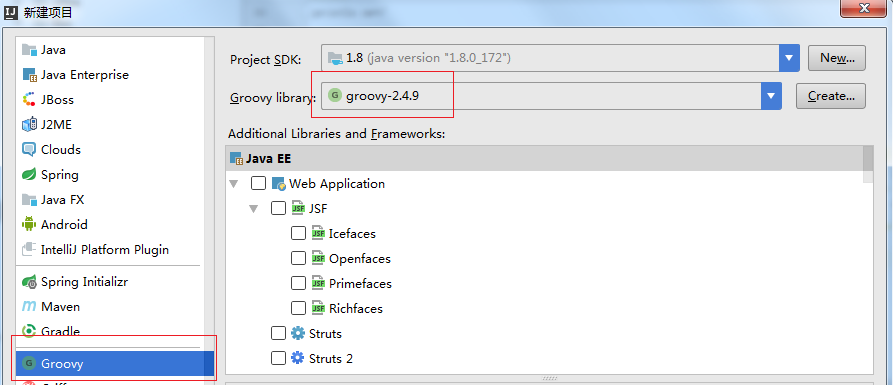


2.搜索plugins，在plugins中搜索groovy

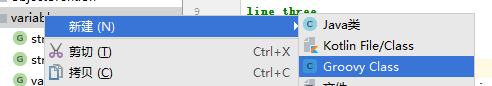


### 3.3 groovy工程创建

1）新建项目，选择Groovy，并选择本地解压的Groovy SDK根目录



1. 新建groovy class



3）输入println “Hello Groovy”，直接运行

在Windows下的cmd窗口中运行grails RunApp命令，但是报错了，错误如上，而且在开发工具中是可以正常启动的，找了很多原因都不对，最后都重新装系统了，后来发现了问题：在cmd的编码会影响命令行的运行，默认情况下cmd的编码是gbk，我改成了utf-8，才导致了这个问题，真的是太纠结了，下次引以为戒吧！附改cmd编码的命令：

ERROR: JAVA\_HOME is set to an invalid directory: D:\\*\*\soft\jdk1.8\jdk

Please set the JAVA\_HOME variable in your environment to match the

location of your Java installation.

Please set the JAVA\_HOME variable in your environment to match the

location of your Java installation.

chcp 查看当前编码

chcp 65001 就是换成UTF-8代码页，还需要点击边框右键-属性-字体-改为Lucida Console

chcp 936 可以换回默认的GBK

chcp 437 是美国英语

## 第4节 Gradle核心语法讲解及实战

### 4.1 基础语法

1）数据类型，def定义弱类型的变量

|  |
| --- |
| **package** variable  **int** x = 10  println x.class  **double** y = 3.14 println y.class  **def** x\_1 = 11 println x\_1.class **def** y\_1 = 3.1415 println y\_1.class **def** name = **'Qndroid'** println name.class  x\_1 = **'Test'** println x\_1.class |
| **class java.lang.Integer**  **class java.lang.Double**  **class java.lang.Integer**  **class java.math.BigDecimal**  **class java.lang.String**  **class java.lang.String** |

2）集合处理

|  |
| --- |
| **def** color = [**red**: **'ff0000'**, **green**: **'00ff00'**, **blue**: **'0000ff'**] color.**yellow** = **'ffff00'** *//添加* println color[**'red'**] println color.**green** println color.getClass() println color.**yellow** *//注意key的取值,key做为变量时特殊处理* **def** pink = **'pink'** color.(pink) = **'ff00ff'** println color.toMapString() **def** map = [**a**: 1, **b**: 2] color.**complex** = map println color.toMapString() |
| **ff0000**  **00ff00**  **class java.util.LinkedHashMap**  **ffff00**  **[red:ff0000, green:00ff00, blue:0000ff, yellow:ffff00, pink:ff00ff]**  **[red:ff0000, green:00ff00, blue:0000ff, yellow:ffff00, pink:ff00ff, complex:[a:1, b:2]]** |

### 4.2 String

1）引号的使用

|  |
| --- |
| **def** name = **'a single \'a\'string'** println name.class  **def** thupleName = **'''\ line one line two line three '''** println thupleName  **def** doubleName = **"this a common String"** println doubleName.class |
| **class java.lang.String**  **line one**  **line two**  **line three**  **class java.lang.String** |

2）可扩展表达式

|  |
| --- |
| **def** name1 = **"Qndroid" def** sayHello = **"Hello:** ${name1}**"** println sayHello println sayHello.class  **def** sum = **"the sum of 2 and 3 equals** ${2 + 3}**"** *//可扩展做任意的表达式* println sum **def** result = echo(sum) println result.class  String echo(String message) {  **return** message } |
| **Hello: Qndroid**  **class org.codehaus.groovy.runtime.GStringImpl**  **the sum of 2 and 3 equals 5**  **class java.lang.String**  **groovy Hello**  **groovy Hello** |

3）字符串方法

|  |
| --- |
| */\* ==================字符串的方法=================== \*/* **def** str = **"groovy Hello"** println str.center(8) println str.padLeft(8, **'a'**) **def** str2 = **'Hello'** println str > str2 println str[0] println str[0..1] println str - str2  println str.reverse() println str.capitalize() |
| **true**  **g**  **gr**  **groovy**  **olleH yvoorg**  **Groovy Hello** |

|  |
| --- |
| **def** str = **"groovy"** println str.center(11,**'a'**) println str.padLeft(11,**'b'**) println str.padRight(11,**'c'**)  **def** str2 = **"oo"** println str < str2  println str.getAt(0) println str[0..2]  println str.minus(str2) println str.reverse() println str.capitalize() |
| **aagroovyaaa**  **bbbbbgroovy**  **groovyccccc**  **true**  **g**  **gro**  **grvy**  **yvoorg**  **Groovy** |

### 4.3 逻辑控制

1）switch..case

|  |
| --- |
| **def** x = 1.23 **def** result **switch** (x) {  **case 'foo'**:  result = **'found foo'  break  case 'bar'**:  result = **'bar'  break  case** [1.23, 4, 5, 6, **'inlist'**]: *//列表* result = **'list'  break  case** 12..30:  result = **'range'** *//范围* **break  case** Integer:  result = **'integer'  break  case** BigDecimal:  result = **'big decimal'  break  default**: result = **'default'** }  println result |
| **list** |

2）for循环

|  |
| --- |
| *//对范围的for循环* **def** sum = 0 **for** (i **in** 0..9) {  sum += i } println sum  */\*\*  \* 对List的循环  \*/* **for** (i **in** [1, 2, 3, 4, 5, 6, 7, 8, 9]) {  sum += i } |
| *45* |

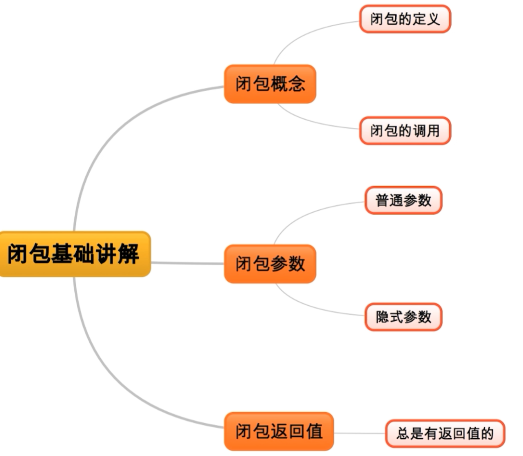
3）Map循环

|  |
| --- |
| */\*\*  \* 对Map进行循环  \*/* **for** (i **in** [**'lili'**: 1, **'luck'**: 2, **'xiaoming'**: 3]) {  sum += i.value } |

4）n的阶层，闭包

|  |
| --- |
| println calculate(5) **def** calculate(**int** number) {  **def** result = 1  1.upto(number) { num ->  result \*= num  }  **return** result } |
| 120 |

### 4.4 闭包基础



1）demo

|  |
| --- |
| **def** clouser = { String name,**int** age -> println **"Hello Groovy!** ${name}**, age is** ${age}**"**} clouser(**"byf"**,23) clouser.call(**'byf'**,23) |
| **Hello Groovy! byf, age is 23**  **Hello Groovy! byf, age is 23** |

2）递归

|  |
| --- |
| **int** x = cal(101) **int** fab(**int** number){  **int** result = 1;  1.upto(number,{num -> result \*= num})  **return** result } println x  **int** fab2(**int** number){  **int** result = 1;  number.downto(1){  num -> result \*=num  }  **return** result } **int** cal(**int** number){  **int** result  number.times {num -> result += num}  **return** result } |
| **5050** |

3）this、owner、delegate

|  |
| --- |
| **def** sscriptClouser = {  println **"this: "** + **this** println **"owner: "**+ owner  println **"delegate: "**+delegate } sscriptClouser.call() |
| **this: variable.HelloGroovy@49d904ec**  **owner: variable.HelloGroovy@49d904ec**  **delegate: variable.HelloGroovy@49d904ec** |

4）闭包嵌套

|  |
| --- |
| **class** Person{  **def Clouser** = {  println **"this: "** + **this** println **"owner: "**+ owner  println **"delegate: "**+delegate  }   **def** say(){  **def** classClouser = {  println **"this: "** + **this** println **"owner: "**+ owner  println **"delegate: "**+delegate  }  classClouser.call()  } } Person p = **new** Person() p.Clouser.call() p.say() **def** nestClouser = {  **def** innerClouser = {  println **"this: "** + **this** println **"owner: "**+ owner  println **"delegate: "**+delegate  }  innerClouser.delegate = p  innerClouser.call() } nestClouser.call() |
| **this: variable.Person@10e41621**  **owner: variable.Person@10e41621**  **delegate: variable.Person@10e41621**  **this: variable.Person@10e41621**  **owner: variable.Person@10e41621**  **delegate: variable.Person@10e41621**  **this: variable.HelloGroovy@3daa422a**  **owner: variable.HelloGroovy$\_run\_closure1@27ce24aa**  **delegate: variable.Person@10e41621** |

5）闭包的委托策略

|  |
| --- |
| */\* 闭包的委托策略  \*/* **class** Student {  String **name  def pretty** = {**"My name is** ${**name**}**"**}  String toString(){  **pretty**.call()  } }  **class** Teacher {  String **name** } **def** stu = **new** Student(**name**: **'Sarash'**) **def** tea = **new** Teacher(**name**:**'Ondriod'**) stu.pretty.delegate = tea *//stu.pretty.resolveStrategy = Closure.DELEGATE\_ONLY //stu.pretty.resolveStrategy = Closure.DELEGATE\_FIRST* stu.pretty.resolveStrategy = Closure.***OWNER\_FIRST*** println stu.toString() |
| *//My name is Ondriod*  *//My name is Ondriod*  *My name is Sarash* |

### 4.5 字符串与闭包结合使用

1）判断、查找

|  |
| --- |
| String str = **'the 2 and 3 is 5'** str.each {  String tmp -> print tmp.multiply(2) } println str.each {}  println str.find{  String s->s.isNumber() }  **def** list = str.findAll{  String s->s.isNumber() } println list.toListString()  **def** result = str.any{  String s->s.isNumber() } println result  result = str.every {  String s->s.isNumber() } println result |
| tthhee 22 aanndd 33 iiss 55the 2 and 3 is 5  2  [2, 3, 5]  true  false |

2）字符串方法

|  |
| --- |
| String str = **'the 2 and 3 is 5' def** list2 = str.collect {  it.toUpperCase() } println list2 |
| [T, H, E, , 2, , A, N, D, , 3, , I, S, , 5] |

3）字符串数组

|  |
| --- |
| **def** list=[1,2,3,4,5] println list.class println list.size() **def** array = [1,2,3,4,5] **as int**[] **int**[] array2 = [1,2,3,4,5] println array.class println array2.class |
| **class java.util.ArrayList**  **5**  **class [I**  **class [I** |

4）排序、遍历

|  |
| --- |
| **def** sortList = [2,3,4,5,2,3,5,5,12,1] Comparator mc = {  a,b -> a==b ?0:Math.abs(a) <Math.abs(b)? 1 : -1 } *//Collections.sort(sortList,mc)* sortList.sort(mc) println sortList  **def** sortStringList = [**'aaaa'**,**'bb'**,**'ccc'**] sortStringList.sort{it -> **return** it.size()} println sortStringList  **int** result = sortList.find {**return** it %2 == 0} println result **def** ret = sortList.findAll {**return** it%2==0} println ret.max() println ret.min() |
| **[12, 5, 5, 5, 4, 3, 3, 2, 2, 1]**  **[bb, ccc, aaaa]**  **12**  **12**  **2** |

### 4.6 列表学习

1）list的定义、添加、删除

|  |
| --- |
| **package** datastruct  *//def list = new ArrayList() //java的定义方式* **def** list = [1, 2, 3, 4, 5] println list.class println list.size() **def** array = [1, 2, 3, 4, 5] **as int**[] **int**[] array2 = [1, 2, 3, 4, 5]  */\*\*  \* list的添加元素  \*/* list.add(6) list.leftShift(7) list << 8 println list.toListString() **def** plusList = list + 9 println plusList.toListString()  */\*\*  \* list的删除操作  \*/* list.remove(7) list.remove((Object) 6) list.removeAt(5) list.removeElement(4) list.removeAll { **return** it % 2 == 0 } println list - [6, 7] println list.toListString() |
| **class java.util.ArrayList**  **5**  **[1, 2, 3, 4, 5, 6, 7, 8]**  **[1, 2, 3, 4, 5, 6, 7, 8, 9]**  **[1, 3, 5]**  **[1, 3, 5]** |

2）列表的排序

|  |
| --- |
| */\*\*  \* 列表的排序  \*/* **def** sortList = [6, -3, 9, 2, -7, 1, 5] Comparator mc = { a, b ->  a == b ? 0 :  Math.abs(a) < Math.abs(b) ? -1 : 1 } Collections.*sort*(sortList, mc) sortList.sort { a, b ->  a == b ? 0 :  Math.*abs*(a) < Math.*abs*(b) ? 1 : -1 } println sortList **def** sortStringList = [**'abc'**, **'z'**, **'Hello'**, **'groovy'**, **'java'**] sortStringList.sort { it -> **return** it.size() } println sortStringList |
| *class java.util.ArrayList*  *5*  *[9, -7, 6, 5, -3, 2, 1]*  *[z, abc, java, Hello, groovy]* |

3）列表的查找

|  |
| --- |
| */\*\*  \* 列表的查找  \*/* **def** findList = [-3, 9, 6, 2, -7, 1, 5] **int** result = findList.find { **return** it % 2 == 0 } *//def result = findList.findAll { return it % 2 != 0 }* println result *//def result = findList.any { return it % 2 != 0 } //def result = findList.every { return it % 2 == 0 }* println result println findList.min { **return** Math.*abs*(it) } println findList.max { **return** Math.*abs*(it) } **def** num = findList.count { **return** it % 2 == 0 } println num |
| *class java.util.ArrayList*  *5*  *6*  *6*  *1*  *9*  *2* |

### 4.7 映射详解

1）映射的定义

|  |
| --- |
| **package** datastruct  *//def map = new HashMap()* **def** colors = [**red** : **'ff0000'**,  **green**: **'00ff00'**,  **blue** : **'0000ff'**] *//索引方式* println colors[**'red'**] println colors.**red** colors.**blue** *//添加元素* colors.**yellow** = **'ffff00'** colors.**complex** = **[a**: 1, **b**: 2**]** println colors.getClass() |
| **ff0000**  **ff0000**  **class java.util.LinkedHashMap** |

2）Map的遍历

|  |
| --- |
| */\*\*  \* Map操作详解  \*/* **def** students = [  1: [**number**: **'0001'**, **name**: **'Bob'**,  **score** : 55, **sex**: **'male'**],  2: [**number**: **'0002'**, **name**: **'Johnny'**,  **score** : 62, **sex**: **'female'**],  3: [**number**: **'0003'**, **name**: **'Claire'**,  **score** : 73, **sex**: **'female'**],  4: [**number**: **'0004'**, **name**: **'Amy'**,  **score** : 66, **sex**: **'male'**] ]  *//遍历Entry* students.each { **def** student ->  println **"the key is** ${student.key}**, "** +  **" the value is** ${student.value}**"** } *//带索引的遍历* students.eachWithIndex { **def** student, **int** index ->  println **"index is** ${index}**,the key is** ${student.key}**, "** +  **" the value is** ${student.value}**"** } *//直接遍历key-value* students.eachWithIndex { key, value, index ->  println **"the index is** ${index}**,the key is** ${key}**, "** +  **" the value is** ${value}**"** } |
| *the key is 1, the value is [number:0001, name:Bob, score:55, sex:male]*  *the key is 2, the value is [number:0002, name:Johnny, score:62, sex:female]*  *the key is 3, the value is [number:0003, name:Claire, score:73, sex:female]*  *the key is 4, the value is [number:0004, name:Amy, score:66, sex:male]*  *index is 0,the key is 1, the value is [number:0001, name:Bob, score:55, sex:male]*  *index is 1,the key is 2, the value is [number:0002, name:Johnny, score:62, sex:female]*  *index is 2,the key is 3, the value is [number:0003, name:Claire, score:73, sex:female]*  *index is 3,the key is 4, the value is [number:0004, name:Amy, score:66, sex:male]*  *the index is 0,the key is 1, the value is [number:0001, name:Bob, score:55, sex:male]*  *the index is 1,the key is 2, the value is [number:0002, name:Johnny, score:62, sex:female]*  *the index is 2,the key is 3, the value is [number:0003, name:Claire, score:73, sex:female]*  *the index is 3,the key is 4, the value is [number:0004, name:Amy, score:66, sex:male]* |

2）Map的查找

|  |
| --- |
| *//Map的查找* **def** entry = students.find { **def** student ->  **return** student.value.**score** >= 60 } println entry  **def** entrys = students.findAll { **def** student ->  **return** student.value.**score** >= 60 } println entrys  **def** count = students.count { **def** student ->  **return** student.value.**score** >= 60 &&  student.value.**sex** == **'male'** } println count **def** names = students.findAll { **def** student ->  **return** student.value.**score** >= 60 }.collect {  **return** it.value.**name** } println names.toListString()  **def** group = students.groupBy { **def** student ->  **return** student.value.**score** >= 60 ? **'及格'** : **'不及格'** } println group.toMapString() |
| *2={number=0002, name=Johnny, score=62, sex=female}*  *[2:[number:0002, name:Johnny, score:62, sex:female], 3:[number:0003, name:Claire, score:73, sex:female], 4:[number:0004, name:Amy, score:66, sex:male]]*  *1*  *[Johnny, Claire, Amy]*  *[不及格:[1:[number:0001, name:Bob, score:55, sex:male]], 及格:[2:[number:0002, name:Johnny, score:62, sex:female], 3:[number:0003, name:Claire, score:73, sex:female], 4:[number:0004, name:Amy, score:66, sex:male]]]* |

3）Map的排序

|  |
| --- |
| */\*\*  \* 排序  \*/* **def** sort = students.sort { **def** student1, **def** student2 ->  Number score1 = student1.value.**score** Number score2 = student2.value.**score  return** score1 == score2 ? 0 : score1 < score2 ? -1 : 1 }  println sort.toMapString() |
| *[1:[number:0001, name:Bob, score:55, sex:male], 2:[number:0002, name:Johnny, score:62, sex:female], 4:[number:0004, name:Amy, score:66, sex:male], 3:[number:0003, name:Claire, score:73, sex:female]]* |

### 4.8范围详解

|  |
| --- |
| **package** datastruct  **def** range = 1..10 println range[0] println range.contains(10) println range.from println range.to |
| 1  true  1  10 |

|  |
| --- |
| **def** result = getGrade(75) println result  **def** getGrade(Number number) {  **def** result  **switch** (number) {  **case** 0..<60:  result = **'不及格'  break  case** 60..<70:  result = **'及格'  break  case** 70..<80:  result = **'良好'  break  case** 80..100:  result = **'优秀'  break** }   **return** result } |
| **良好** |

### 4.9面向对象

定义一个Person

|  |
| --- |
| **package** objectorention  */\*\*  \* 1.groovy中默认都是public  \*/* **class** Person **implements** Serializable {  String **name** Integer **age  def** increaseAge(Integer years) {  **this**.**age** += years  }  */\*\*  \* 一个方法找不到时，调用它代替  \** ***@param*** *name  \** ***@param*** *args  \** ***@return*** *\*/* **def** invokeMethod(String name, Object args) {  **return "the method is** ${name}**, the params is** ${args}**"** }  **def** methodMissing(String name, Object args) {  **return "the method** ${name} **is missing"** } } |

定义一个脚本

|  |
| --- |
| **package** objectorention  *//def person = new Person(name: 'Qndroid', age: 26) //println person.cry()* ExpandoMetaClass.*enableGlobally*() *//为类动态的添加一个属性* Person.metaClass.sex = **'male' def** person = **new** Person(**name**: **'Qndroid'**, **age**: 26) println person.sex person.sex = **'female'** println **"the new sex is:"** + person.sex *//为类动态的添加方法* Person.metaClass.sexUpperCase = { -> sex.toUpperCase() } **def** person2 = **new** Person(**name**: **'Qndroid'**, **age**: 26) println person2.sexUpperCase() *//为类动态的添加静态方法* Person.metaClass.static.createPerson = {  String name, **int** age -> **new** Person(**name**: name, **age**: age) } **def** person3 = Person.createPerson(**'renzhiqiang'**, 26) println person3.name + **" and "** + person3.age |
| **male**  **the new sex is:female**  **MALE**  **renzhiqiang and 26** |

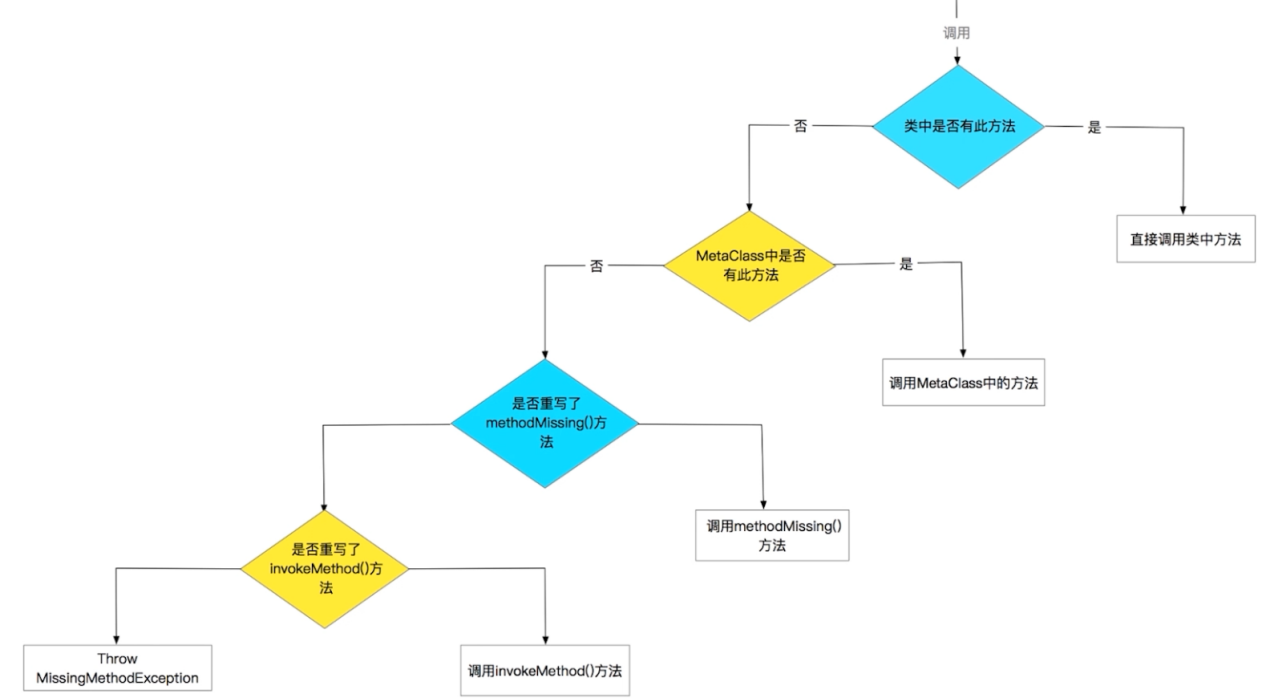
定义一个接口

|  |
| --- |
| **package** objectorention */\*\*  \* 接口中不许定义非public的方法  \*/* **interface** Action {  **void** eat()  **void** drink()  **void** play() } |

定义一个trait接口（适配器模式）

|  |
| --- |
| **trait** DefualtAction {  **abstract void** eat()  **void** play() {  println **' i can play.'** } } |

Groovy的运行时编译



定义一个Person管理器

|  |
| --- |
| **package** objectorention.expand  **import** objectorention.Person  */\*\*  \* Person类的管理器  \*/* **class** PersonManager {  **static** Person createPerson(String name, **int** age) {  **return** Person.createPerson(name, age)  } } |

定义一个应用的init

|  |
| --- |
| **package** objectorention.expand  **import** objectorention.Person  */\*\*  \* 模拟一个应用的管理类  \*/* **class** ApplicationManager {   **static void** init() {  ExpandoMetaClass.*enableGlobally*()  *//为第三方类添加方法* Person.metaClass.static.createPerson = { String name, **int** age ->  **new** Person(**name**: name, **age**: age)  }  } } |

定义一个Main

|  |
| --- |
| **package** objectorention.expand  **class** Entry {  **static void** main(**def** args) {  println **'应用程序正在启动...'** *//初始化* ApplicationManager.*init*()  println **'应用程序初始化完成...'   def** person = PersonManager.  *createPerson*(**'renzhiqiang'**, 26)  println **"the person name is** ${person.name} **"** +  **"and the age is** ${person.age}**"** } } |
| **应用程序正在启动...**  **应用程序初始化完成...**  **the person name is renzhiqiang and the age is 26** |

## 第5节 Gradle高级用法实战

### 5.1JSON操作详解

1）JsonOutput、JsonSplur

|  |
| --- |
| **package** file  **import** groovy.json.JsonOutput **import** groovy.json.JsonSlurper **import** objectorention.Person   **def** list = [**new** Person(**name**:**'xiaohong'**,**age**: 23),  **new** Person(**name**:**'xiaoming'**,**age**: 24) ] **def** json = JsonOutput.*toJson*(list)  **def** jsonSlpur = **new** JsonSlurper() println jsonSlpur.parseText(json) println json println JsonOutput.*prettyPrint*(json) |
| **[[age:23, name:xiaohong], [age:24, name:xiaoming]]**  **[{"age":23,"name":"xiaohong"},{"age":24,"name":"xiaoming"}]**  **[**  **{**  **"age": 23,**  **"name": "xiaohong"**  **},**  **{**  **"age": 24,**  **"name": "xiaoming"**  **}**  **]** |

2）从jsonplaceholder获取json格式数据

|  |
| --- |
| **package** file  **import** groovy.json.JsonSlurper  **def** reponse =  getNetworkData(  **'http://jsonplaceholder.typicode.com/albums/6'**)  println reponse println JsonOutput.*prettyPrint*(JsonOutput.*toJson*(reponse))  **def** getNetworkData(String url) {  *//发送http请求* **def** connection = **new** URL(url).openConnection()  connection.setRequestMethod(**'GET'**)  connection.connect()  **def** response = connection.content.text  *//将json转化为实体对象* **def** jsonSluper = **new** JsonSlurper()  **return** jsonSluper.parseText(response) } |
| **[userId:1, id:6, title:natus impedit quibusdam illo est]**  **[userId:1, id:6, title:natus impedit quibusdam illo est]**  **{**  **"userId": 1,**  **"id": 6,**  **"title": "natus impedit quibusdam illo est"**  **}** |

### 5.2xml文件解析详解

1. 解析一个xml文件

|  |
| --- |
| **package** file  **import** groovy.xml.MarkupBuilder  **final** String xml = **'''  <response version-api="2.0">  <value>  <books id="1" classification="android">  <book available="20" id="1">  <title>疯狂Android讲义</title>  <author id="1">李刚</author>  </book>  <book available="14" id="2">  <title>第一行代码</title>  <author id="2">郭林</author>  </book>  </books>  <books id="2" classification="web">  <book available="10" id="1">  <title>Vue从入门到精通</title>  <author id="4">李刚</author>  </book>  </books> </value>  </response> '''** *//开始解析此xml数据* **def** xmlSluper = **new** XmlSlurper() **def** response = xmlSluper.parseText(xml)  println response.value.books[0].book[0].title.text() println response.value.books[0].book[0].author.text() println response.value.books[1].book[0].@available |
| **疯狂Android讲义**  **李刚**  **10** |

遍历xml上的节点

|  |
| --- |
| **def** list = [] response.value.books.each { books ->  *//下面开始对书结点进行遍历* books.book.each { book ->  **def** author = book.author.text()  **if** (author.equals(**'李刚'**)) {  list.add(book.title.text())  }  } }  println list.toListString() |
| **[疯狂Android讲义, Vue从入门到精通]** |

深度遍历xml数据.depthFirst(). 等价于 .'\*\*'.

|  |
| --- |
| *//深度遍历xml数据.depthFirst(). 等价于 .'\*\*'.* **def** titles = response.depthFirst().findAll { book ->  **return** book.author.text() == **'李刚'** ? **true** : **false** } println titles.toListString() |
| **[疯狂Android讲义李刚, Vue从入门到精通李刚]** |

广度遍历xml上的节点 .children(). 等价于 .’\*’.

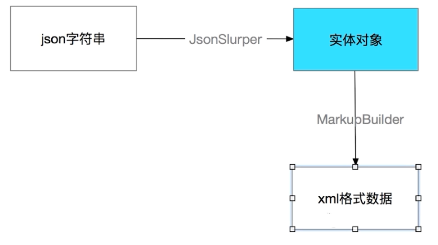
|  |
| --- |
| *//广度遍历xml数据* **def** name = response.value.books.children().findAll { node ->  node.name() == **'book'** && node.@id == **'2'** }.collect { node ->  **return** node.title.text() }  println name |
| **[第一行代码]** |

1. 创建一个xml文件

|  |
| --- |
| */\*\*  \* 生成xml格式数据  \* <langs type='current' count='3' mainstream='true'>  <language flavor='static' version='1.5'>Java</language>  <language flavor='dynamic' version='1.6.0'>Groovy</language>  <language flavor='dynamic' version='1.9'>JavaScript</language>  </langs>  \*/* **def** sw = **new** StringWriter() **def** xmlBuilder = **new** MarkupBuilder(sw) *//用来生成xml数据的核心类 //根结点langs创建成功* xmlBuilder.langs(**type**: **'current'**, **count**: **'3'**,  **mainstream**: **'true'**) {  *//第一个language结点* language(**flavor**: **'static'**, **version**: **'1.5'**) {  age(**'16'**)  }  language(**flavor**: **'dynamic'**, **version**: **'1.6'**) {  age(**'10'**)  }  language(**flavor**: **'dynamic'**, **version**: **'1.9'**, **'JavaScript'**) }  println sw |
| **<langs type='current' count='3' mainstream='true'>**  **<language flavor='static' version='1.5'>**  **<age>16</age>**  **</language>**  **<language flavor='dynamic' version='1.6'>**  **<age>10</age>**  **</language>**  **<language flavor='dynamic' version='1.9'>JavaScript</language>**  **</langs>** |

对象转xml

|  |
| --- |
| **def** langs = **new** Langs() xmlBuilder.langs(**type**: langs.type, **count**: langs.count,  **mainstream**: langs.mainstream) {  *//遍历所有的子结点* langs.languages.each { lang ->  language(**flavor**: lang.flavor,  **version**: lang.version, lang.value)  } } println sw *//对应xml中的langs结点* **class** Langs {  String **type** = **'current'  int count** = 3  **boolean mainstream** = **true  def languages** = [  **new** Language(**flavor**: **'static'**,  **version**: **'1.5'**, **value**: **'Java'**),  **new** Language(**flavor**: **'dynamic'**,  **version**: **'1.3'**, **value**: **'Groovy'**),  **new** Language(**flavor**: **'dynamic'**,  **version**: **'1.6'**, **value**: **'JavaScript'**)  ] } *//对应xml中的languang结点* **class** Language {  String **flavor** String **version** String **value** } |
| **<langs type='current' count='3' mainstream='true'>**  **<language flavor='static' version='1.5'>Java</language>**  **<language flavor='dynamic' version='1.3'>Groovy</language>**  **<language flavor='dynamic' version='1.6'>JavaScript</language>**  **</langs>** |



### 5.3groovy文件处理详解

1. 读取文件，闭包

|  |
| --- |
| **package** file  **import** objectorention.Person  **def** file = **new** File(**'hello.txt'**)  file.eachLine { line ->  println line } |
| **hello groovy**  **hello gradle**  **hello world** |

1. 读取文件，getText

|  |
| --- |
| **def** file = **new** File(**'hello.txt'**) **def** text = file.getText() println text |
| **hello groovy**  **hello gradle**  **hello world** |

1. 读取部分文件

|  |
| --- |
| *//读取文件部分内容* **def** reader = file.withReader { reader ->  **char**[] buffer = **new char**[20]  reader.read(buffer)  **return** buffer } println reader |
| *hello groovy*  *hello* |

1. 文件拷贝

|  |
| --- |
| **def** file = **new** File(**'hello.txt'**) **def** result1 = copy(**'hello.txt'** , **'hello2.txt'**) println result1  **def** copy(String sourcePath, String destationPath) {  **try** {  *//首先创建目标文件* **def** desFile = **new** File(destationPath)  **if** (!desFile.exists()) {  desFile.createNewFile()  }   *//开始copy* **new** File(sourcePath).withReader { reader ->  **def** lines = reader.readLines()  desFile.withWriter { writer ->  lines.each { line ->  writer.append(line + **"\r\n"**)  }  }  }  **return true** } **catch** (Exception e) {  e.printStackTrace()  }  **return false** } |
| **Hello2.txt**  hello groovy hello gradle hello world |

1. 保存对象到文件

|  |
| --- |
| **def** file = **new** File(**'hello.txt'**) **def** person = **new** Person(**name**: **'Qndroid'**, **age**: 26) saveObject(person, **'person.bin'**)   **def** saveObject(Object object, String path) {  **try** {  *//首先创建目标文件* **def** desFile = **new** File(path)  **if** (!desFile.exists()) {  desFile.createNewFile()  }  desFile.withObjectOutputStream { out ->  out.writeObject(object)  }  **return true** } **catch** (Exception e) {  }  **return false** } |
| **person.bin** |

1. 从person.bin中读取对象

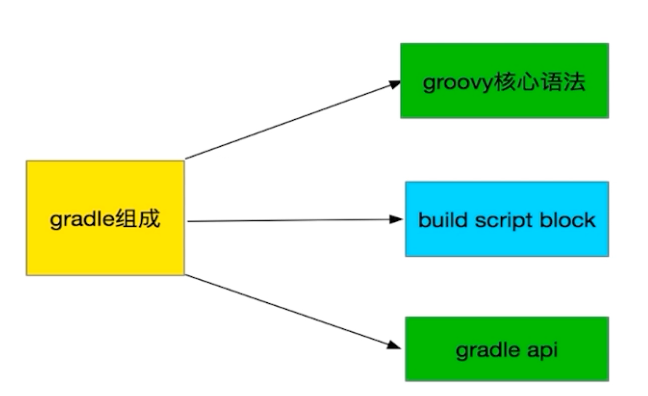
|  |
| --- |
| **def** file = **new** File(**'hello.txt'**)  **def** result3 = (Person) readObject(**'person.bin'**) println **"the name is** ${result3.name} **and the age is** ${result3.age}**"  def** readObject(String path) {  **def** obj = **null  try** {  **def** file = **new** File(path)  **if** (file == **null** || !file.exists()) **return null** *//从文件中读取对象* file.withObjectInputStream { input ->  obj = input.readObject()  }  } **catch** (Exception e) {   }  **return** obj } |
| **the name is Qndroid and the age is 26** |

注意：在闭包中读写文件，groovy帮助我们把流的关闭做了。

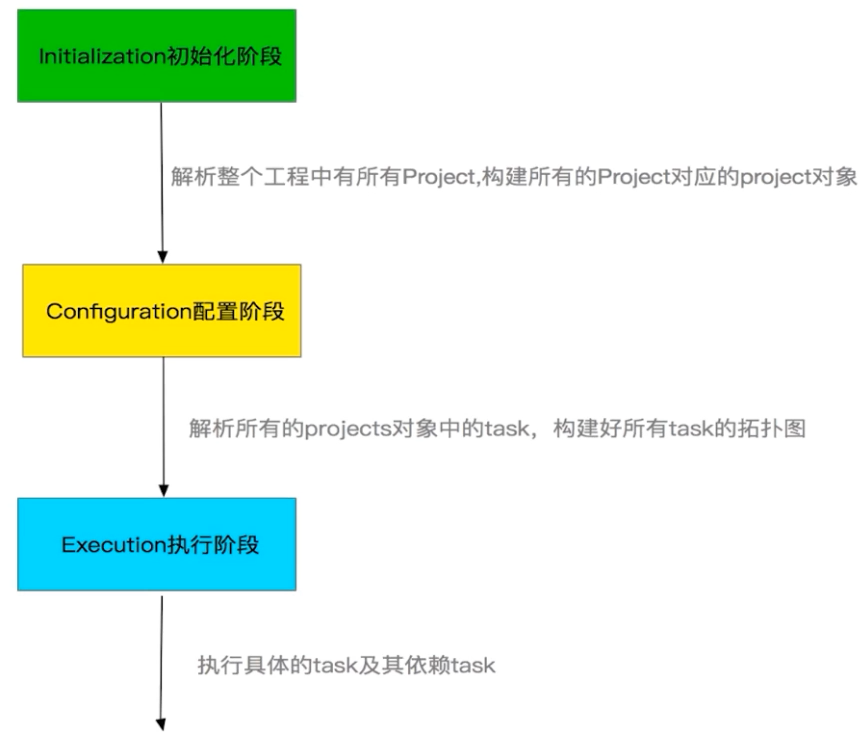
## 第6节 Gradle高级用法实战

### 6.1 gradle概念及优势

* 不仅仅是构建工具，也是一种编程框架
* 优势：灵活；粒度（tinker）；扩展性；兼容性；



### 6.2 gradle执行流程讲解



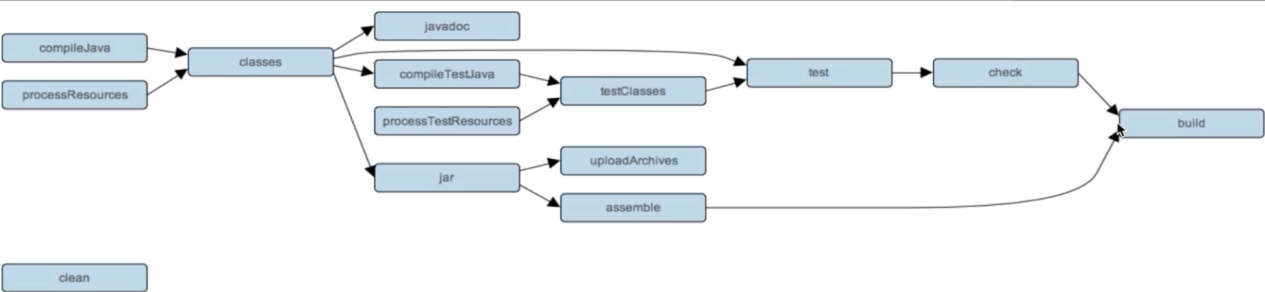
### 6.3 gradle生命周期监听

1）生命周期

|  |
| --- |
| */\*\*  \* 配置阶段开始前的监听回调  \*/* **this**.beforeEvaluate{  println **'beforeEvaluate：配置阶段执行开始...'** } */\*\*  \* 配置阶段完成以后的回调  \*/* **this**.afterEvaluate{  println **'afterEvaluate：配置阶段执行完毕...'** }  */\*\*  \*gradle执行完毕后的回调监听  \*/* **this**.gradle.buildFinished {  println **'buildFinished：执行阶段执行完毕...'** }  **this**.gradle.beforeProject {  println **'beforeProject：项目之前...'** } **this**.gradle.afterProject {  println **'afterProject：项目之后...'** } |
| **F:\groovy\_peojects\gradlelife>gradlew clean**  **settings.gradle：初始化阶段开始...**  **afterProject：项目之后...**  **afterEvaluate：配置阶段执行完毕...**  **:clean UP-TO-DATE**  **BUILD SUCCESSFUL**  **Total time: 1.759 secs**  **buildFinished：执行阶段执行完毕...** |

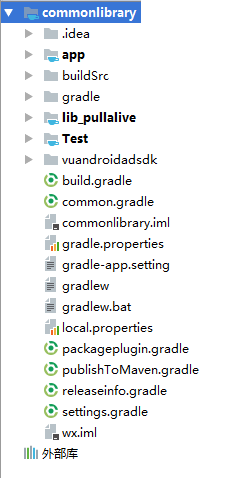
2）执行gradlew build的依赖，有向无环图

|  |
| --- |
| F:\groovy\_peojects\gradlelife>gradlew build  settings.gradle：初始化阶段开始...  afterProject：项目之后...  afterEvaluate：配置阶段执行完毕...  :compileJava UP-TO-DATE  :compileGroovy UP-TO-DATE  :processResources UP-TO-DATE  :classes UP-TO-DATE  :jar  :assemble  :compileTestJava UP-TO-DATE  :compileTestGroovy UP-TO-DATE  :processTestResources UP-TO-DATE  :testClasses UP-TO-DATE  :test UP-TO-DATE  :check UP-TO-DATE  :build  BUILD SUCCESSFUL  Total time: 2.041 secs  buildFinished：执行阶段执行完毕... |



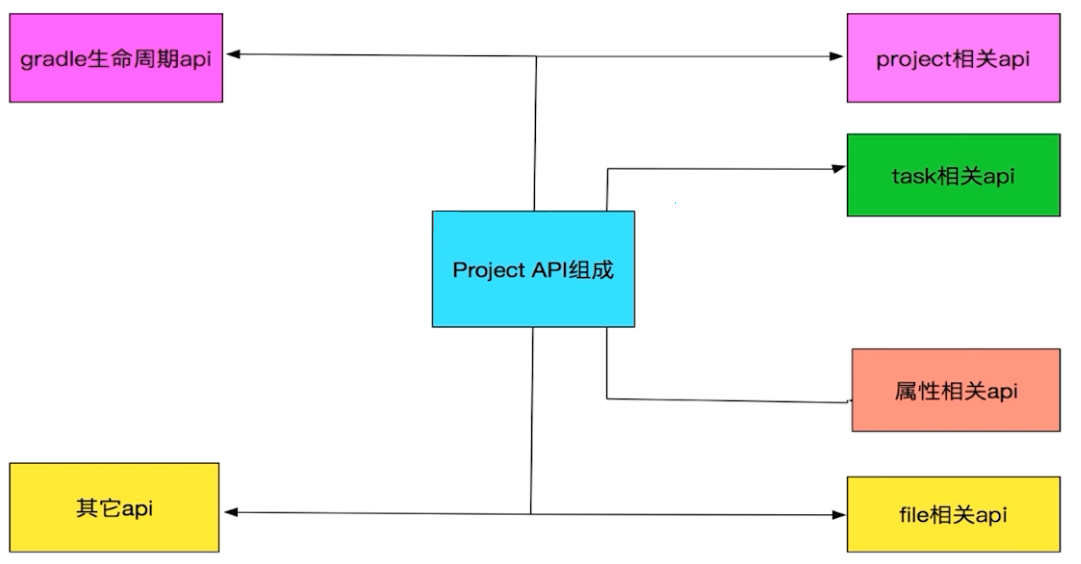
## 第7节 Gradle核心之Project详解及实战

### 7-1 project详解



对于gradle来说，每个带有build.gradle的目录都是一个project

### 7-2 project核心api分解



### 7.3 project相关api详解

1）遍历父子项目名称

|  |
| --- |
| *// project 相关api详解* **this**.getPropjects() **def** getPropjects() {  println **'------------'** println **'ROOT Projects'** println **'-------------'  this**.getAllprojects().eachWithIndex { Project project, **int** index ->  **if** (index == 0) {  println **"Root project ':**${project.name}**'"** } **else** {  println **"+--- project ':**${project.name}**'"** }  } } |
| **F:\groovy\_peojects\gradlelife>gradlew clean**  **settings.gradle：初始化阶段开始...**  **------------**  **ROOT Projects**  **-------------**  **Root project ':gradlelife'**  **+--- project ':app'**  **afterProject：项目之后...**  **afterEvaluate：配置阶段执行完毕...**  **beforeProject：项目之前...**  **afterProject：项目之后...**  **:clean UP-TO-DATE**  **:app:clean UP-TO-DATE**  **BUILD SUCCESSFUL**  **Total time: 2.553 secs**  **buildFinished：执行阶段执行完毕...** |

2）获取子工程的项目名称

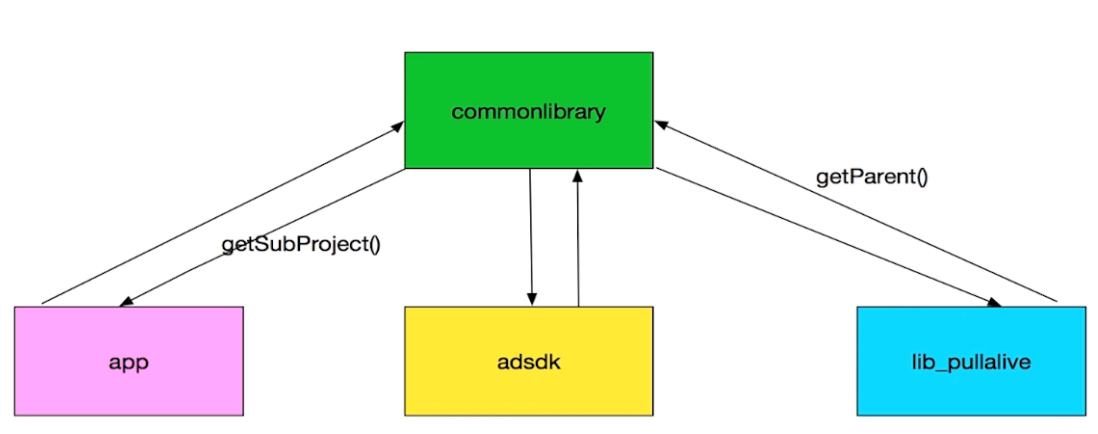
|  |
| --- |
| *// project 相关api详解* **this**.getSubPros() **def** getSubPros() {  println **'------------'** println **'Sub Projects'** println **'-------------'  this**.getSubprojects().eachWithIndex { Project project, **int** index ->  println **"Root project ':**${project.name}**'"** } } |
| **F:\groovy\_peojects\gradlelife>gradlew clean**  **------------**  **Sub Projects**  **-------------**  **Root project ':app'**  **:clean UP-TO-DATE**  **:app:clean UP-TO-DATE**  **BUILD SUCCESSFUL**  **Total time: 1.899 secs** |

3）在子工程app目录下获取父工程的名称

|  |
| --- |
| *// project 相关api详解* **this**.getParentPros() **def** getParentPros() {  println **'------------'** println **'Parent Projects'** println **'-------------'  this**.getParent().eachWithIndex { Project project, **int** index ->  println **"Parent project ':**${project.name}**'"** } } |
| F:\groovy\_peojects\gradlelife\app>gradle clean  > Configure project :  ------------  Sub Projects  -------------  Root project ':app'  > Configure project :app  ------------  Parent Projects  -------------  Parent project ':gradlelife'  BUILD SUCCESSFUL in 1s  1 actionable task: 1 up-to-date |

4）获取根工程的名称

|  |
| --- |
| *// project 相关api详解* **this**.getRootPro() **def** getRootPro() {  **def** name1 = **this**.getRootProject().name  println **"the root project name is :**${name1}**"** } |
| **F:\groovy\_peojects\gradlelife\app>gradle clean**  **> Configure project :**  **------------**  **Sub Projects**  **-------------**  **Root project ':app'**  **> Configure project :app**  **the root project name is :gradlelife**  **BUILD SUCCESSFUL in 1s**  **1 actionable task: 1 up-to-date** |



5）设置项目的属性

|  |
| --- |
| */\*\*  \*project api 详解  \*/* project(**'app'**) { Project project ->  *//println project  //apply plugin: 'com.byf.gradle'* group **'com.byf'** version **'1.0-SNAPSHOT'** dependencies{}  *//andriod{}* } |

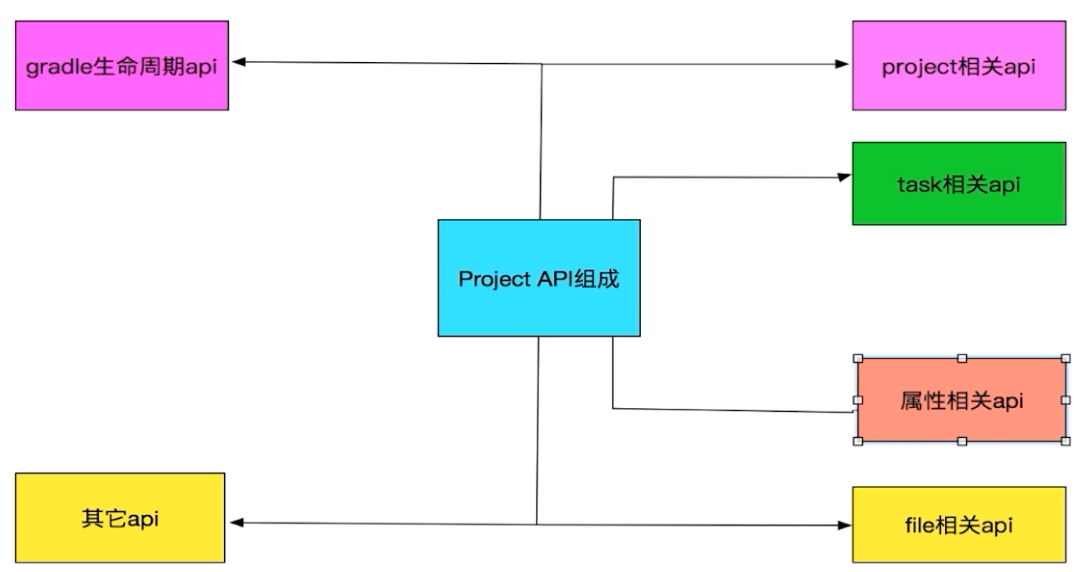
6）为所有子工程设置group

|  |
| --- |
| allprojects {  group **'com.byf'** version **'1.0.0'** } println project(**'test'**).group |
| com.byf  :clean UP-TO-DATE  :app:clean UP-TO-DATE  :test:clean UP-TO-DATE  BUILD SUCCESSFUL  Total time: 2.112 secs |

7）为子工程引入一个写好的脚本

|  |
| --- |
| subprojects { Project project ->  *//引入一个写好的脚本* **if** (project.plugins.hasPlugin(**'com.byf.libary'**))  apply **from**: **'../publishToMaven.gradle'** } |

### 7.4 属性相关api讲解



1）为所有子工程定义全局变量

|  |
| --- |
| **def** mNumber = 25 **def** mLib = **'com.byf.gradle'** *// 定义扩展属性 root模块* subprojects {  ext {  number = 25  lib = **'com.byf.gradle'** } } |
| // 子app模块  println **this**.number println **this**.lib |
| **F:\groovy\_peojects\gradlelife>gradlew clean**  **25**  **com.byf.gradle**  **:clean UP-TO-DATE**  **:app:clean UP-TO-DATE**  **:test:clean UP-TO-DATE**  **BUILD SUCCESSFUL**  **Total time: 1.903 secs** |

2）在父工程定义全局变量，子工程引用

|  |
| --- |
| *// root 模块* ext {  number = 25  lib = **'com.byf.gradle'** } |
| *// 子app模块* println **this**.rootProject.number println **this**.rootProject.lib |
| **F:\groovy\_peojects\gradlelife>gradlew clean**  **25**  **com.byf.gradle**  **:clean UP-TO-DATE**  **:app:clean UP-TO-DATE**  **:test:clean UP-TO-DATE**  **BUILD SUCCESSFUL**  **Total time: 1.848 secs** |

3）定义一个公用全局的变量文件

|  |
| --- |
| *//定义公共common.gradle的变量* ext {  commonname = **'this is common.gradle.'** commonint = 25  angular = [  **'js'** : **'2.0.1'**,  **'bootstrap'** : **'3.0.0'**,  **'ts'** : **'1.0.0'** ] } |
| *// 子test模块* println **this**.commonname println **this**.commonint println **this**.angular.js println **this**.angular.bootstrap println **this**.angular.ts |
| **F:\groovy\_peojects\gradlelife>gradlew clean**  **this is common.gradle.**  **25**  **2.0.1**  **3.0.0**  **1.0.0**  **:clean UP-TO-DATE**  **:app:clean UP-TO-DATE**  **:test:clean UP-TO-DATE**  **BUILD SUCCESSFUL**  **Total time: 2.001 secs** |

2）gradle.properties中定义，hasProperty取参数

|  |
| --- |
| **// 文件gradle.properties isLoadTest**=**false mCompileSdkVersion**=**25** |
| *// 文件settings.gradle* rootProject.name = **'gradlelife'** *//println 'settings.gradle：初始化阶段开始...'* include **'app'**  **// 根据是否在gradle.properties中配置的参数，决定是否引入test模块 if** (hasProperty(**'isLoadTest'**) ? isLoadTest.toBoolean() : **false**) {  include **':test'** } |
|  |

7-7 文件属性操作讲解

7-8 依赖相关api讲解及实战

7-9 gradle执行外部命令实战