
SCALA OBJECTS: HANDS ON LAB

By www.HadoopExam.com

Contact us: hadoopexam@gmail.com / admin@hadoopexam.com

Note: These instructions should be used with the HadoopExam Scala: Professional Trainings. Where it is executed and you can do hands on with trainer.

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Topics

1. Scala Objects
2. Object casting
3. Getting class information in Scala
4. Creating application using Object
5. Companion Object
6. Package Level Object
7. Apply method in Object (don't use new keyword)

Object has dual meaning

- Object as a keyword
- Instance of a Class

Object Cast Example

```
val o: Any = "HadoopExam.com"  
val s: String = o //This line will give error  
val s: String = o.asInstanceOf[String]  
val i: Int = 10  
i.asInstanceOf[String] //ClassCastException
```

Getting actual class, definition of a Class.

```
classOf[String]  
classOf[String].getMethods  
classOf[String].getFields  
  
//Similarly you can get class of an Object  
10.getClass  
100.0.getClass  
(1,2,3).getClass
```

Another use of object (As keyword)

Create scala application using App trait. Hence, application body will be placed inside main method.

```
object HadoopExam extends App {  
  if(args.length==1)  
    println(args(0)+ " Welcome to HadoopExam Learning Resources : Scala Training " )  
}
```

Commands to run this application

```
scalac HadoopExam.scala  
scala HadoopExam Amit
```

Other way, using main method (trait is not required)

```
object HadoopExam {  
  def main(args: Array[String]) {  
    if(args.length==1)  
      println(args(0)+ " Welcome to HadoopExam Learning Resources : Scala Training " )  
  }  
}
```

Commands to run this application

```
scalac HadoopExam.scala  
scala HadoopExam Amit
```

Companion Object

Use :paste mode

- Define your class and object in the same file, giving them the same name.
- Define members that should appear to be “static” in the object.
- Define nonstatic (instance) members in the class.

```
class HadoopExam(name:String, id:Int) {  
  def info = println(s"Name : $name id : $id , Fixed Bonus : ${HadoopExam.FIXED_BONUS}")  
}  
  
object HadoopExam{  
  val FIXED_BONUS:Int=5000  
}  
  
val h = new HadoopExam("Amit",101)  
h.info //like instance method  
  
HadoopExam.FIXED_BONUS //like static variable (Generally constant values are defined like this)
```

Package level code

Now create a class test.scala

- Put common code, on package level (Which will be available to all classes inside the packages). This is known as package object.
- We don't have to full package name in package.scala class

pacakage.scala

```
package com  
  
package object test {  
  val bonus:Int=1000  
  val age:Int=21  
  
  def info=println(s"Default bonus : $bonus and Default Age : $age")  
}
```

-

```
package com.test
```

```
object test1 extends App {  
  
  println(bonus)  
  println(age)  
  info  
  
}
```

Commands to run

```
scalac package.scala  
scalac test1.scala  
  
scala com.test.test1
```

Sometimes, we don't use new, keyword while creating object?

- As we have seen in the case, class we are not using new keyword. (apply methods are created in case classes by Scala compiler)
- Another funda is use Companion object + apply method. Require following three things
 - o Class
 - o Object with same as class name (Companion object)
 - o Apply method to set all the values
 - o If you need more than one way to create instance. You have to define that many apply methods.

```
class Employee {  
  var id:Int=0  
  var age:Int=21  
  var name:String=_  
}  
  
object Employee {  
  def apply(id:Int, age:Int, name: String): Employee = {  
    var e = new Employee  
    e.name = name  
    e.age = age  
    e.id = id  
    e  
  }  
}  
  
var p = Employee(100,21,"Amit")  
p.name  
p.age  
p.id
```

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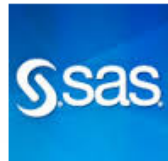
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