

Kotlin

For Happy Development

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[#github.com/lynas/Kotlin-Presentation](https://github.com/lynas/Kotlin-Presentation)
[#youtube.com/user/szLynAs/videos](https://youtube.com/user/szLynAs/videos)

What is Kotlin?

- Statically typed language
- Started 2010
- JetBrains tooling
- Open source
- Apache 2
- Android friendly
- Complete interoperable with JAVA
- Easy ramp up
- Small runtime

Who using it ?

Google, Expedia, NBC News, Netflix, Amex



How Can I use It

- Ant
- Maven
- Gradle
- Kobalt
- IntelliJ IDEA
- Android Studio
- Eclipse
- Netbeans
- Command line
- Vim
- Emacs

```
public class Main {  
    public static void main(String[] args) {  
        System.out.println("Hello world");  
    }  
}
```

```
fun main(args: Array<String>) {  
    println("Hello world")  
}
```

JAVA

```
public class PersonInJava {  
    private int id;  
    private String name;  
  
    public PersonInJava(int id, String name) {  
        this.id = id;  
        this.name = name;  
    }  
  
    public int getId() {  
        return id;  
    }  
  
    public void setId(int id) {  
        this.id = id;  
    }  
  
    public String getName() {  
        return name;  
    }  
  
    public void setName(String name) {  
        this.name = name;  
    }  
}
```

Kotlin

```
class PersonInKotlin (var id: Int, var name:String)
```

JAVA

```
public class PersonInJava {
    private int id;
    private String name;

    public PersonInJava(int id, String name) {
        this.id = id;
        this.name = name;
    }

    public int getId() {
        return id;
    }

    public void setId(int id) {
        this.id = id;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    @Override
    public boolean equals(Object o) {
        if (this == o) return true;
        if (o == null || getClass() != o.getClass()) return false;

        PersonInJava that = (PersonInJava) o;

        if (id != that.id) return false;
        return name.equals(that.name);
    }

    @Override
    public int hashCode() {
        int result = id;
        result = 31 * result + name.hashCode();
        return result;
    }
}
```

Kotlin

```
data class PersonInKotlin (var id: Int, var name:String)
```


Val / Var

```
data class PersonIn (val id: Int, val name:String)
```

```
data class PersonIn (var id: Int, var name:String)
```

```
val name = "GOT"
```

```
name = "IGI" <- error
```

Creating Object

```
data class Person(var id: Int, var name:String)
```

```
val person = Person(1, "Sazzad")
```

```
val person2 = Person(name = "Sazzad", id = 2)
```

Default Parameter

```
data class Person(var id: Int=0, var name:String="")
```

```
val person = Person()  
person.id = 10
```

```
val person2 = person.copy()  
val person3 = person.copy(id=20)
```

Null Safety

```
fun personJava(person: Person?) {  
    if (person?.name != null) {  
        printPersonName(person.name)  
    }  
}
```

```
fun printPersonName(name: String) {  
    println(name)  
}
```

Function / Method

```
fun printMe(name: String) {  
    println(name)  
}
```

```
fun addNumbers(num1:Int, num2:Int) : Int {  
    return num1 + num2  
}
```

```
fun addNumbers(num1:Int, num2:Int) = num1 + num2
```

```
fun unlimited(vararg numbers: Int) {  
    for (number in numbers) {  
  
    }  
}  
unlimited(1,2,3,4)
```

Function / Method

```
fun testPair() : Pair<Int, Int>{  
    return Pair(1,2)  
}
```

```
fun testTriple() : Triple<String, String, Int>{  
    return Triple("name", "address", 44)  
}
```

```
val list = listOf(Pair("dhaka", "Bangladesh"), "delli" to "india")
```

```
for (item in list) {  
    println(item.first)  
    println(item.second)  
}
```

```
for ((city, country) in list) {  
  
}
```

Extension Function

```
fun String.hello() {  
    println("Hey String")  
}
```

```
val name : String = "SAZZAD"  
println(name.hello())  
println("".hello())
```

```
fun String.shouldEqual(value: String) = value == this
```

```
"this".shouldEqual("this")
```

```
infix fun String.shouldEqual(value: String) = value == this
```

```
"this" shouldEqual "this"
```

Higher Order Function

```
fun higherOrder(func: (Int, Int) -> Int) {  
    println(func(2, 3))  
}
```

```
fun mySum(x: Int, y: Int): Int {  
    return x + y  
}  
higherOrder(::mySum)
```

```
higherOrder {  
    x, y ->  
        x + y  
}
```

```
fun using(obj: Closeable,  
          action: () -> Unit) {  
    try {  
        action()  
    } finally {  
        obj.close()  
    }  
}
```

```
using(closableObject) {  
  
}
```


CONDITION

```
fun conditionTest1(input: Int) {  
    if (input > 100) {  
        println("GT")  
    } else {  
        println("LT")  
    }  
}
```

```
fun conditionTest1(input: Int) {  
    val result = if (input > 100) {  
        "GT"  
    } else {  
        "LT"  
    }  
}
```

CLASS / INHERITANCE

```
open class Person
```

```
class Employee(val vacationDays : Int) : Person()
```

```
class Contractor : Person()
```

```
fun validVacation(person: Person) {  
    if (person is Employee) {  
        if (person.vacationDays < 20) {  
            println("You need some more time off!!")  
        }  
    }  
}
```

And many more ...

ANKO

```
relativeLayout{
    editText{
        id = 1
        hint = "name"
        textSize = 24f
    }.lparams{
        alignParentTop()
        alignParentLeft()
        alignParentRight()
    }
    editText{
        id = 2
        hint = "age"
    }.lparams {
        below(1)
        alignParentLeft()
        leftOf(3)
    }
}
```

ANDROID EXTENSION

```
TextView textView = ( TextView ) findViewById(R.id.textView)  
textView.setText("Hello World")
```

Instead

```
textView.setText("Hello World")
```

All open plugin

set certain annotation based class to open

Spring Boot

SPRING INITIALIZR bootstrap your application now

Generate a Gradle Project with Kotlin and Spring Boot 1.5.6

Project Metadata

Artifact coordinates

Group

com.example

Artifact

demo

Dependencies

Add Spring Boot Starters and dependencies to your application

Search for dependencies

Web, Security, JPA, Actuator, Devtools...

Selected Dependencies

Generate Project   

Don't know what to look for? Want more options? [Switch to the full version.](#)

Coming next

- Coroutines
- Java 9 support
- Kotlin native

Next Step

- kotlinlang.org
- try.kotlinlang.org
- kotlin koans

Community

The screenshot shows the KotlinLang Slack interface. The left sidebar contains the following sections:

- kotlinlang** (Sazzad Lynas)
- All Unreads**
- All Threads**
- Channels**
 - # android
 - # general (1 unread message)
 - # getting-started
 - # random
- Direct Messages**
 - slackbot
 - Sazzad Lynas (you)
- Apps**

The main chat area is for the **#general** channel, which has 10,823 members. A welcome message is visible: "Welcome, have fun! Slack archive at <http://kotlinlang.slackarchive.io/>".

A blue notification bar indicates: "Saturday, August 40+ new messages since 4:30 AM on".

The chat history shows the following messages:

- Antonel-Ernest Pazargic** (4:30 AM): Recently I started to migrate the spring boot/maven/java/scala(test) project to Kt. Of course I started with tests. Conversion of java tests was quite easy. As for scala test But the main challenge for me is migrating the java production code to kt. And this is b and I did not find a way to make kotlin (kapt) work with lombok. I would like to emphasize I don't really like to delombok the lomboked classes
- Karel Peeters** (4:31 AM): Fortunately most of what Lombok does in handled my kotlin natively.
- Antonel-Ernest Pazargic** (4:32 AM): yes, I know But I would like to keep theombok support for
- Karel Peeters** (4:32 AM): How did you do your `lateinit var` in Java? I assume it wasn't any safer than just a de
- Antonel-Ernest Pazargic** (4:32 AM): the case when someone still need to use java Yes I understand. But I don't understand why `kotlin.Int` cannot be in some cases used w instead of int

Thank you