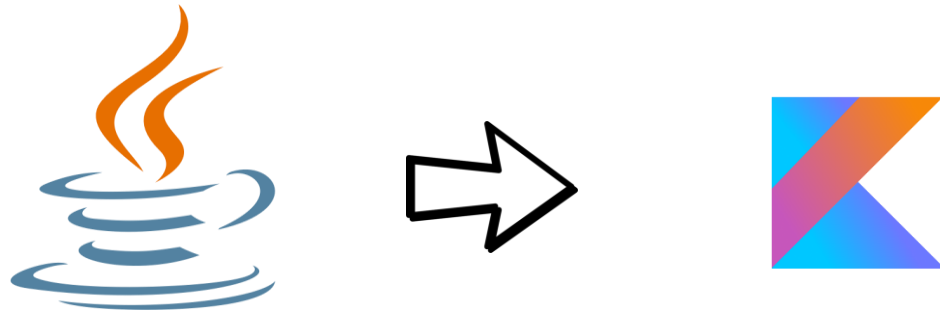


SWITCHING FROM JAVA TO KOTLIN



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HISTORY

July 2011

-First announcement-

February 2012

-Apache 2 licence-

February 2015

-V1.0 released-

PEOPLE



Andrey Breslav

Project lead



Hadi Hariri

Kotlin evangelist



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Kotlin in Action author



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KOTLIN

100% interoperability with Java

Compiles to Java 6

Built in null safety

Functional features

Concise, very readable

First class IDE support

Java

BASIC SYNTAX

Kotlin

```
int a = 5;
```

```
boolean c = false;
```

```
public String getSomeText() {  
    return "Value: " + a + c;  
}
```

```
val a: Int = 5 | val a = 5
```

```
var c = false
```

```
fun getSomeText() : String {  
    return "Value: $a, $b, $c"  
}
```

Java

BASIC SYNTAX

Kotlin

```
public class User {  
  
    private String firstName;  
    private String lastName;  
  
    public User(String firstName, String lastName) {  
        this.firstName = firstName;  
        this.lastName = lastName;  
    }  
    public String getFirstName() {...}  
    public String getLastName() {...}  
    public boolean equals(Object o) {...}  
    public int hashCode() {...}  
    public String toString() {...}  
}
```

```
data class User(val firstName:String,  
               val lastName:String)
```

```
/* BONUS: copy() method */
```

Java

NULL SAFETY

Kotlin

```
public class User {  
  
    //may or may not be null  
    private String lastName;  
  
    public String lowerLastName() {  
        if(lastName != null)  
            return lastName.toLowerCase();  
        return "";  
    }  
  
}
```

```
class User() {  
    var lastName:String?  
  
    fun lowerLastName():String {  
        if(lastName != null)  
            return lastName.toLowerCase()  
        return ""  
    }  
  
}
```

Java

COLLECTIONS

Kotlin

```
public List<User> getGirls(List<User> users) {  
  
    return users.stream()  
        .filter( u -> u.gender.equals("F") )  
        .collect(Collectors.toList());  
  
}
```

```
fun getGirls(users : List<User>) : List<User> {  
  
    return users.filter( { it.gender == "F" } )  
  
}
```


JAVA INTEROPERABILITY

```
fun capitalizeUserName(user : JavaUser) : String? {  
    return user.firstName?.toUpperCase()  
}
```

```
fun capitalizeUserName(user : JavaUser) : String {  
    return user.firstName!!.toUpperCase()  
}
```

```
fun capitalizeUserName(user : JavaUser) : String {  
    return user.firstName.toUpperCase()  
}
```

GRADLE PROJECT

```
buildscript {  
    ext.kotlin_version = '1.1.1'  
    repositories { jcenter() }  
    dependencies {  
        classpath "org.jetbrains.kotlin:kotlin-gradle-plugin:$kotlin_version"  
    }  
}  
apply plugin: 'kotlin'  
repositories { mavenCentral() }  
  
dependencies {  
    testCompile group: 'junit', name: 'junit', version: '4.11'  
    compile "org.jetbrains.kotlin:kotlin-stdlib:$kotlin_version"  
    ...  
}
```

SPRING BOOT

```
@SpringBootApplication
@ComponentScan("com.inova.web")
open class AppLauncher

fun main(args: Array<String>) {
    SpringApplication.run(AppLauncher::class.java, *args)
}
```

SPRING MVC

@Controller

```
class UserController {
```

@Autowired

```
lateinit private var userManager: UserManager
```

```
@RequestMapping("/user/list/{groupId}")
```

```
@ResponseBody
```

```
fun listUsers(@PathVariable groupId : Long): List<User> {
```

```
    return userManager.getGroupUsers(groupId);
```

```
}
```

```
}
```

ANDROID

```
buildscript {  
    ext { kotlin_version = '1.1.1' }  
    repositories { jcenter() }  
    dependencies {  
        classpath 'com.android.tools.build:gradle:2.2.2'  
        classpath "org.jetbrains.kotlin:kotlin-gradle-plugin:$kotlin_version"  
    }  
}  
apply plugin: 'kotlin-android'  
android {  
    // the usual stuff  
    sourceSets {  
        main.java.srcDirs += 'src/main/kotlin'  
    }  
}
```

ANDROID

```
class GameActivity : Activity() {  
  
    lateinit var playerName: TextView  
  
    override fun onCreate(savedInstanceState: Bundle?) {  
        super.onCreate(savedInstanceState)  
        setContentView(R.layout.game_activity)  
        playerName = findViewById(R.id.playerName) as TextView  
        ...  
    }  
  
    override fun onStart() {  
        super.onStart()  
        playerName.text = "Player"  
    }  
}
```

THANK YOU



Books: Kotlin in Action

Site: kotlinlang.org

Blog: blog.jetbrains.com/kotlin