footer: @jlengrand

slidenumbers: true

Introducing Kotlin in your organization

The easy way

s/Kotlin/*/g

- **@jlengrand**

- #Meetups #Kotlin #Gardening

👋👋

- Hielke
- Scala Developer
- Ex-pentester

How it started

- Team Lead at ING

- No greenfield, existing applications

- Still 'stuck' on Java 8 due to local tooling

- Need to keep learning, experiment, and grow as a team

Introducing Kotlin at ING, a long but rewarding story

Kotlin at BigCorp, from Zero to Hero! Our journey introducing Kotlin at ING, from a technical and organizational perspective.

julien lengrand-lambert

Convincing at many levels

- Security

- Compliancy

- Management

- Colleagues...

- First team (on the backend)

A step back : Kotlin today

How old is Kotlin?

- Kotlin : 10 years old (July 2011)
- Java : 26 years
- Go : 12 years old
- Rust : 11 years

Some numbers

- **> 4.8 Million** users last year

- 4th most loved programming language

- **2nd most popular language on the JVM**

- Taught in 45 of the top 200 universities

Kotlin is here to stay

- 2019 : Google chooses Kotlin first for Android

- 2020 : Creation of the Kotlin Foundation

- 2021 : AWS announces idiomatic Kotlin SDK

- 2021 : Kotlin multiplatform comes out of Beta

A few compelling use cases

Ceremony

```java
    private String lastName;

    public User(String name) {
        this(name, "");
    }

    public User(String name, String lastName) {
        this.name = name;
        this.lastName = lastName;
    }

    // And Getters & Setters
}
```

Concurrency

```java
        CompletableFuture.runAsync(
            () -> System.out.println("Or this");
        )
    ).get();
    System.out.println("Printed last");
}
```

```kotlin
runBlocking(Dispatchers.Default) {
    launch {
        println("Maybe this")
    }
    launch {
        println("Or this")
```

Functional programming

```java
public List<String> processStrings(List<String> strings){
    return strings.stream()
            .filter(s-> s.equals("Hello") || s.equals("World") )
            .map(s -> s + " processed")
            .collect(Collectors.toList());
}
```

```kotlin
fun processStrings(strings: List<String>): List<String> {
    return strings
            .filter { it == "Hello" || it == "World" }
            .map { "$it processed" }
}
```

When expressions

```kotlin
import kotlin.math.sqrt

sealed class Shape
data class Circle(val radius : Double) : Shape()
data class Square(val length: Double) : Shape()
data class Rectangle(val length: Double, val breadth: Double) : Shape()

fun Shape.area(): Double {
    return when (this){
        is Circle -> Math.PI * sqrt(this.radius)
        is Square -> sqrt(this.length)
        is Rectangle -> sqrt(this.length * this.breadth)
    }
}
```
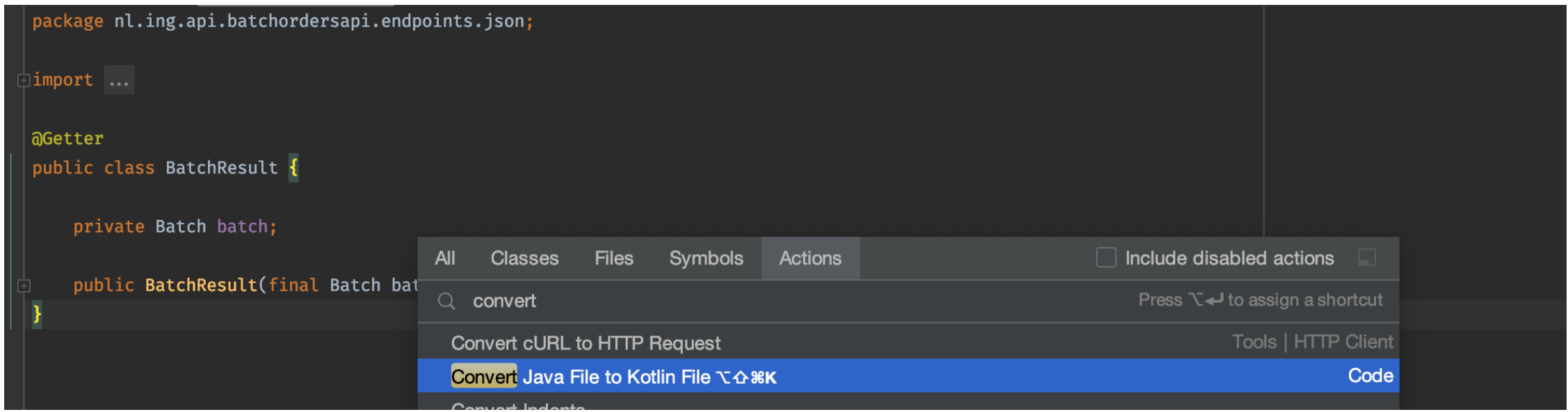
Let's do it!

The first 80%

```java
package nl.ing.api.batchordersapi.endpoints.json;

import ...

@Getter
public class BatchResult {

    private Batch batch;

    public BatchResult(final Batch bat
}
```

All	Classes	Files	Symbols	Actions	☐ Include disabled actions

🔍 convert   Press ⌥↵ to assign a shortcut

Convert cURL to HTTP Request   Tools | HTTP Client

Convert Java File to Kotlin File ⌥⇧⌘K   Code

Convert Indents

Configure Kotlin with Java with Maven

○ All modules

◉ All modules containing Kotlin files: batchorders-api (1) (nl.ing.api)

○ Single module: batchorders-api (2) (nl.ing.nolio.apps) ▾

Kotlin compiler and runtime version: 1.0.0 ▾ ⚠

Cancel   OK

Kotlin

A new version 1.3.60-release-IJ2019.2-1 of the
Kotlin plugin is available. **Install**

Now the real work begins

The last 80%

We have much convincing to do

- Convincing colleagues
- Convincing security / compliance
- Convincing management

Convincing colleagues

- Don't minimize potential issues (I don't know)

Kotlin for Java Developers

★★★★½ **4.7** 1,680 ratings

Svetlana Isakova +1 more instructor

Enroll for Free

Starts Jan 16

Financial aid available

Get others onboard!

- Objectively better in many cases - easy sell?

- Many colleagues are fine with Java

- Find a way to bring in under attention

- Advent of Code - we organized it

- Communication channels Kotlin promotion

- Workfloor chat about AoC puzzles

Convincing Security / Compliance

Convincing Security / Compliance

- All about being safe, not losing money

- Scary - new programming language

- Convincing Scala took ages

Convincing Security / Compliance

- Does it run in Fortify? No

- Does it run in any security tool? No

- How can we support it?

Convincing Security / Compliance

- Prove that Kotlin is safe

- Bring out the AoC contenders

- Facts

- Lobby

Convincing management

The small experiment

- Make it contained
- Make it risk free
- Make it reversible
- Make it cheap

Our team, one application, No overhead

Report!

- Communicate about progress
- Verbalize next steps
- Improve in public

-> There is no wrong question!

JVM languages used for applications in
production

Julien Lengrand-Lambert
@jlengrand

This month #lunchspiration @ing : @trisha_gee rocked with not one, but three talks in two different locations! Full house, and lots of positive energy! I love when people get out of those sessions with more knowledge, and more energy. Thanks @jetbrains and @trisha_gee .

- Certification

- Course

- Titles, ...

Create your own reality

For Ximedes, Kotlin is now the default language of choice for new client projects. We feel the language is mature enough, well-supported, and allows developers to deliver better, cleaner code in less time. We will of course provide continuing support for Java now and in the future – Kotlin is just a new shiny tool in the box!

And don't forget! Don't be a Zealot <3

There will be another fight tomorrow

Some fun questions I've had

If we allow Kotlin today, why not Haskell tomorrow?

How can we hire people that know Kotlin? Won't it be hard to find them on the market?

Can't Kotlin die tomorrow, look what happened to ...?

So Kotlin, is it like replacing AngularJs?

Why don't you just use Scala? We already have processes in place?

Thank you!

Big thanks to Hielke de Vries for the help

Sources :

- https://github.com/jlengrand/introducing-kotlin-in-your-org

- https://snyk.io/jvm-ecosystem-report-2021/