Going beyond JVM with Kotlin

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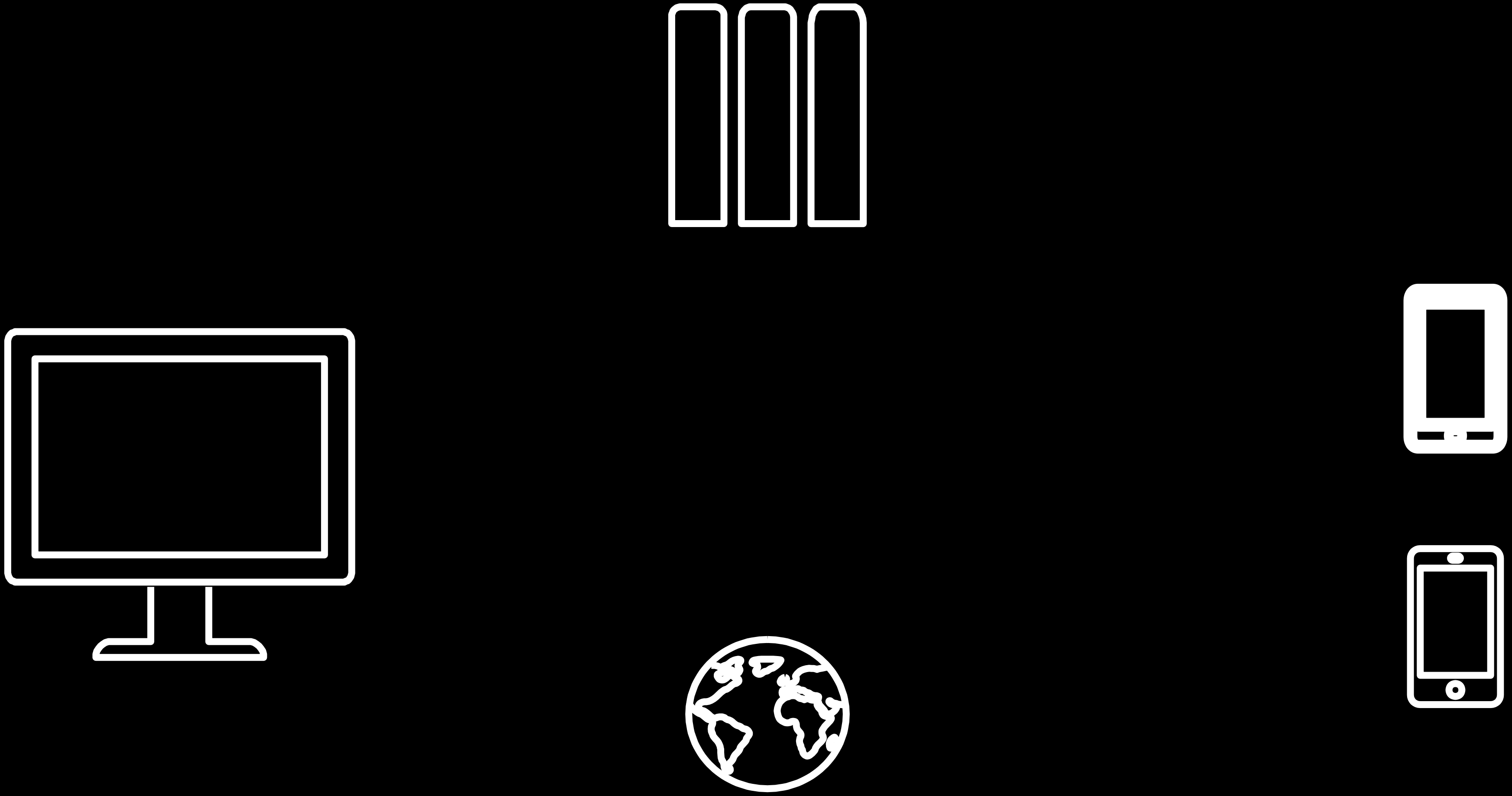

C
C++
C#
Objective-C
Swift

Java
Python
Ruby

JavaScript
TypeScript

Java
Kotlin

Objective-C
Swift

~~C~~
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~~Objective-C~~
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~~Java~~
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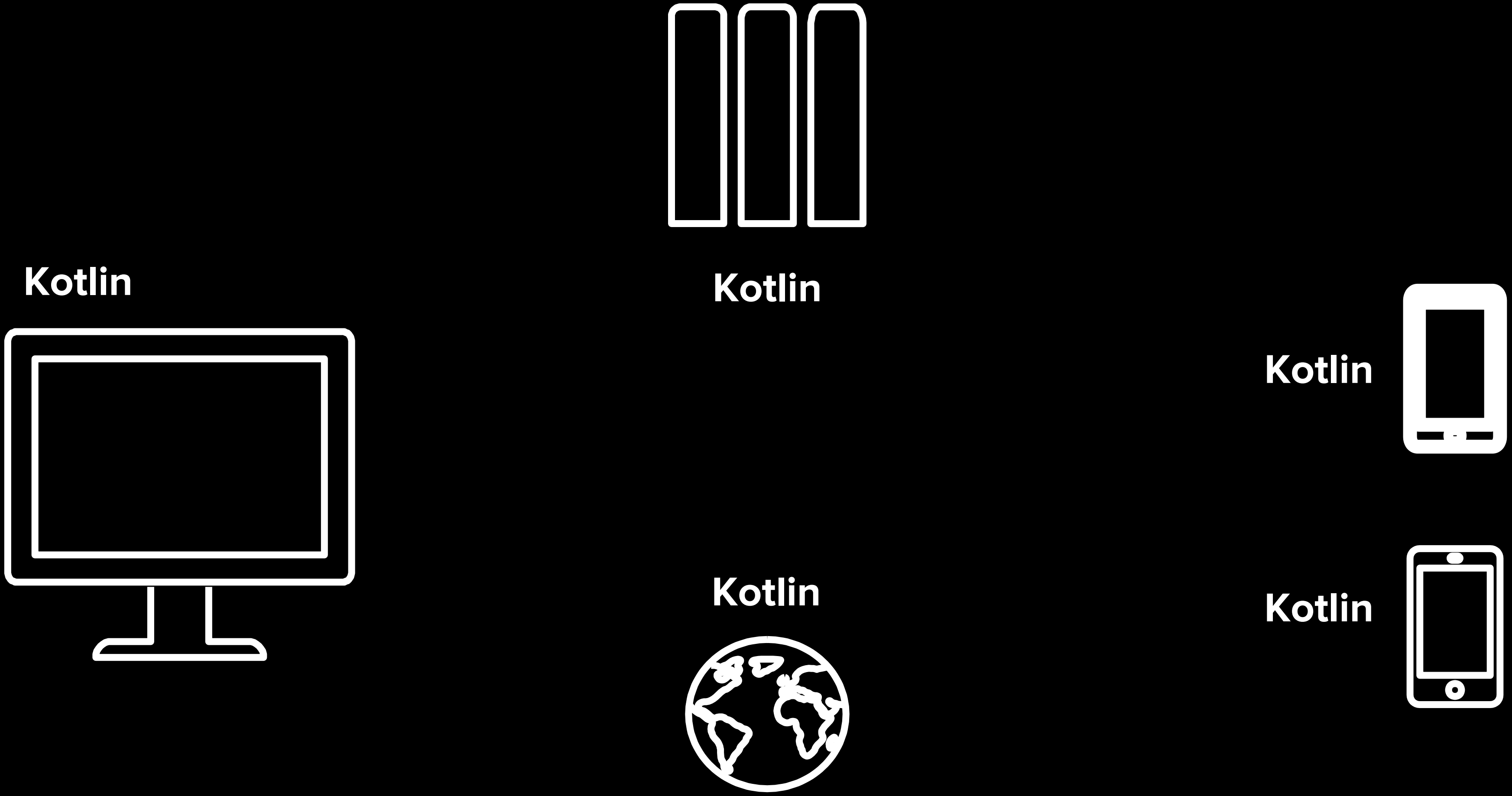
~~Java~~

~~Objective-C~~
~~Swift~~

Kotlin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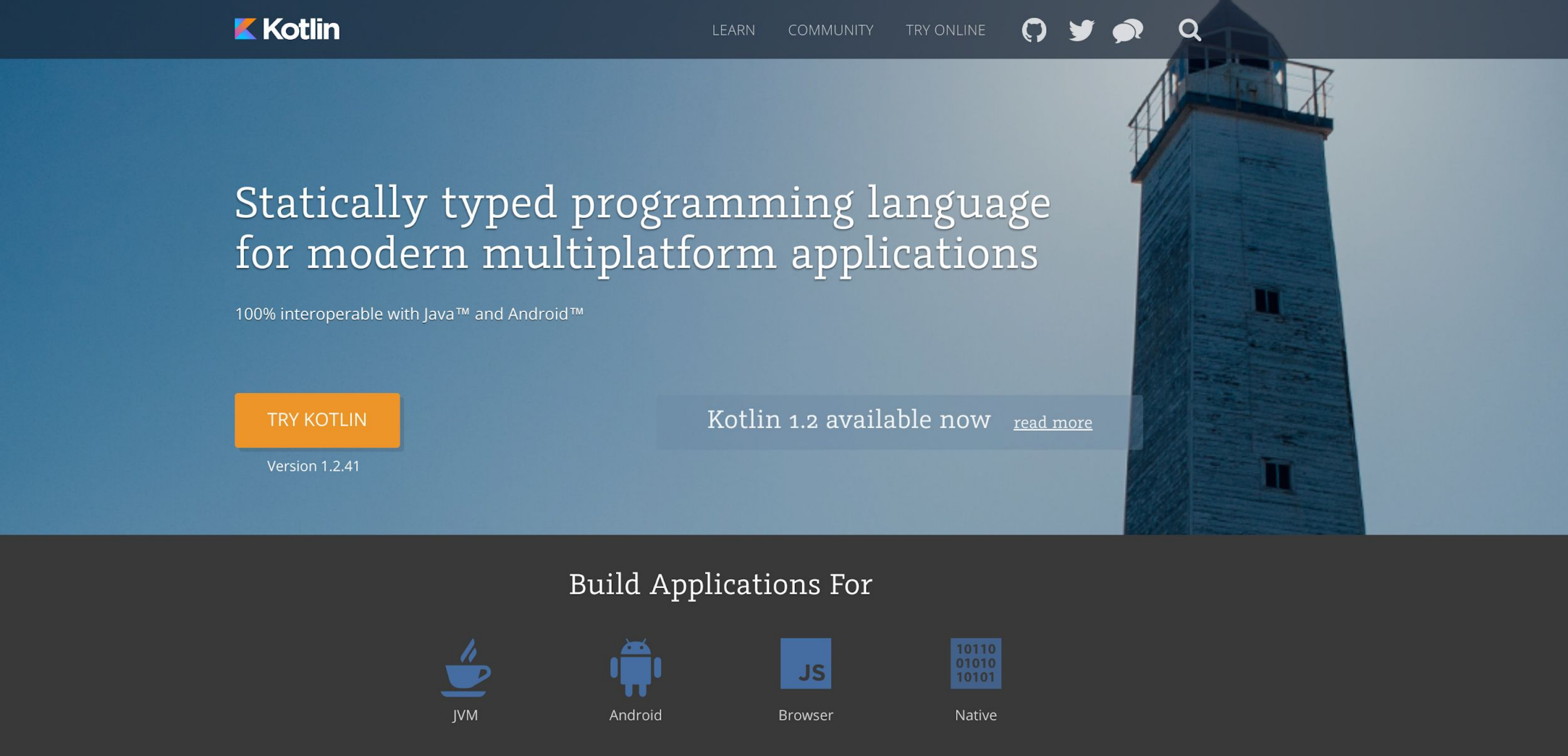


Kotlin

LEARN COMMUNITY TRY ONLINE

Statically typed programming language for modern multiplatform applications

100% interoperable with Java™ and Android™

TRY KOTLIN

Version 1.2.41

Kotlin 1.2 available now read more

Build Applications For

JVM

Android

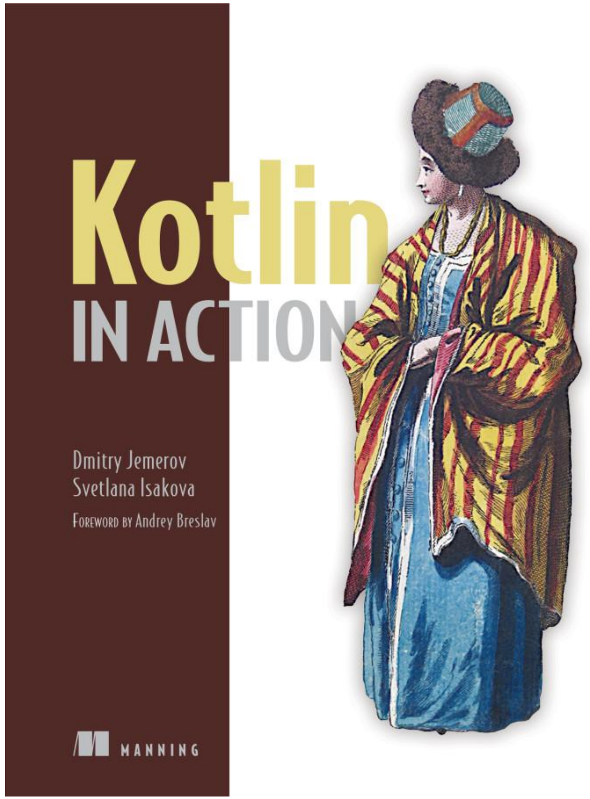
Browser

Native

https://kotlinlang.org

Kotlin

Kotlin in Action

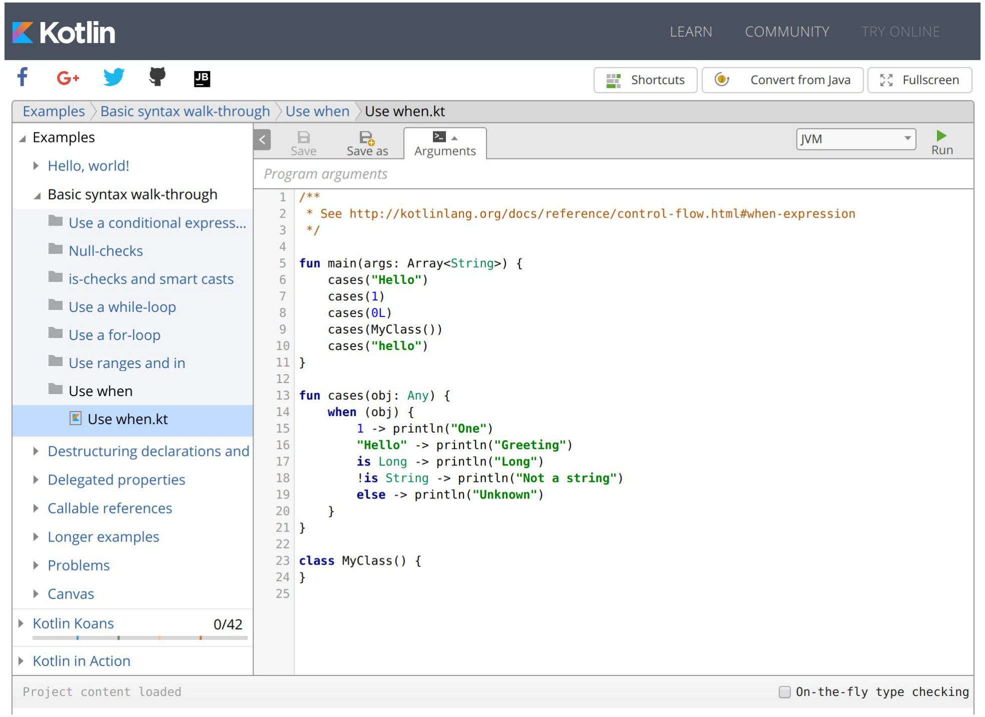


Kotlin
IN ACTION

Dmitry Jemerov
Svetlana Isakova
Foreword by Andrey Breslav

MANNING

Kotlin Koans



```kotlin
/**
 * See http://kotlinlang.org/docs/reference/control-flow.html#when-expression
 */

fun main(args: Array<String>) {
    cases("Hello")
    cases(1)
    cases(0L)
    cases(MyClass())
    cases("hello")
}

fun cases(obj: Any) {
    when (obj) {
        1 -> println("One")
        "Hello" -> println("Greeting")
        is Long -> println("Long")
        !is String -> println("Not a string")
        else -> println("Unknown")
    }
}

class MyClass() {
}
```

https://try.kotl.in

Using the same language across the platforms

- Everyone on the team speaks the same language
- Single team working on all apps
- Simplify full-stack development

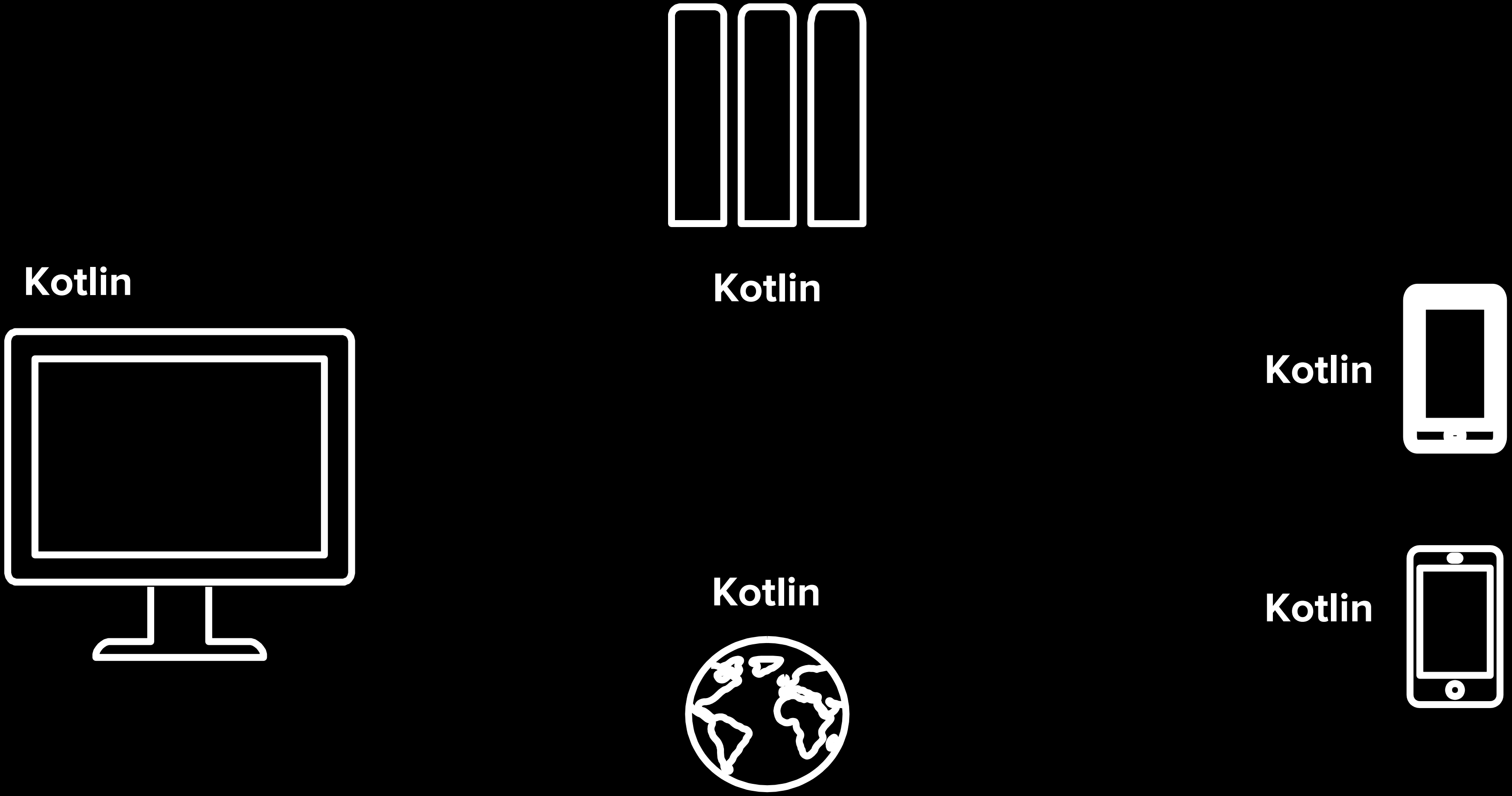
Share code between platforms

Write once, run everywhere

Java™

Write once,
debug everywhere

Java™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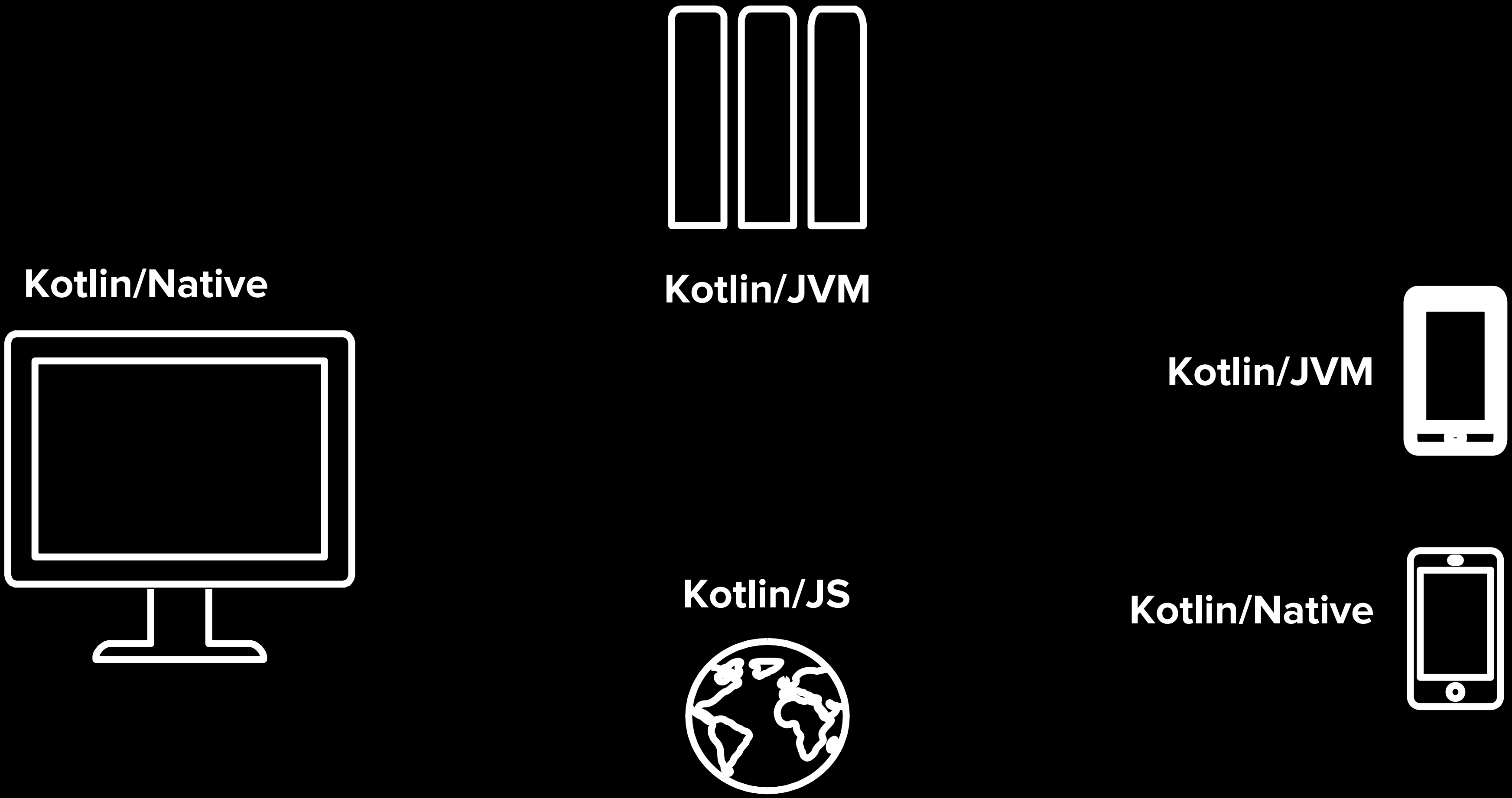

Kotlin/Native
Kotlin/JVM
Kotlin/JVM
Kotlin/JS
Kotlin/Native

Code sharing

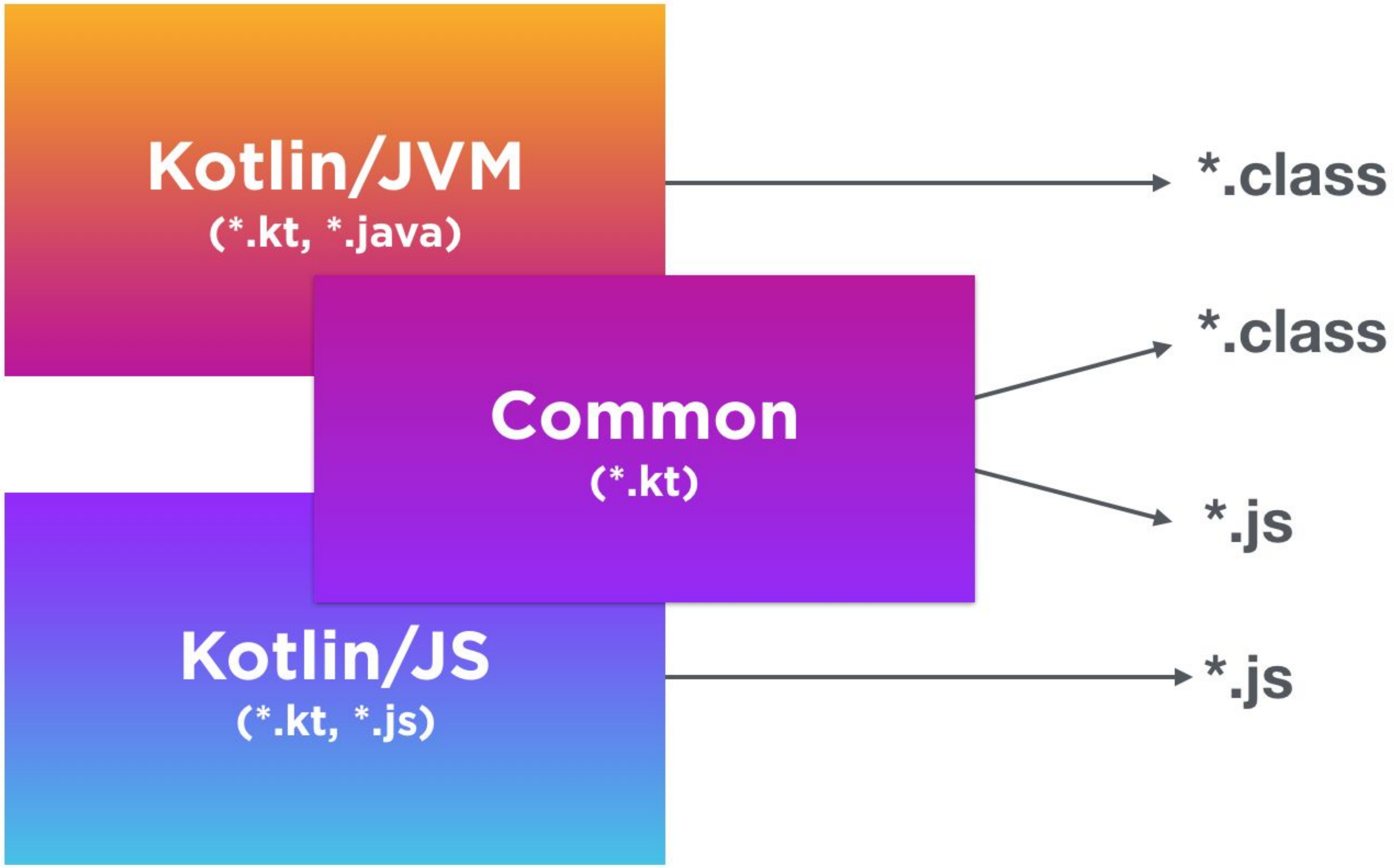
- Share data structures
- Share business logic

Code sharing

- Share data structures
- Share business logic
- Share tests!

Code sharing

- Share data structures
- Share business logic
- Share tests!
- Do **NOT** share UI


Kotlin/JVM
(*.kt, *.java)
*.class
Common
(*.kt)
*.class
*.js
Kotlin/JS
(*.kt, *.js)
*.js

Common module

```
apply plugin: 'kotlin-platform-common'

dependencies {
  compile "org.jetbrains.kotlin:kotlin-stdlib-common:$version"
}
```

Kotlin

Platform module

```
apply plugin: 'kotlin-platform-jvm'

dependencies {
  compile "org.jetbrains.kotlin:kotlin-stdlib:$version"
  expectedBy project(":mp-common")
}
```

Kotlin

expect/actual

```
expect class Foo {
  fun baz()
}

actual class Foo {
  actual fun baz() {}
}
```

Kotlin

expect/actual

```
expect class Foo(bar: String) {
  fun baz()
}

actual class Foo actual constructor(val bar: String) {
  actual fun baz() {}
}
```

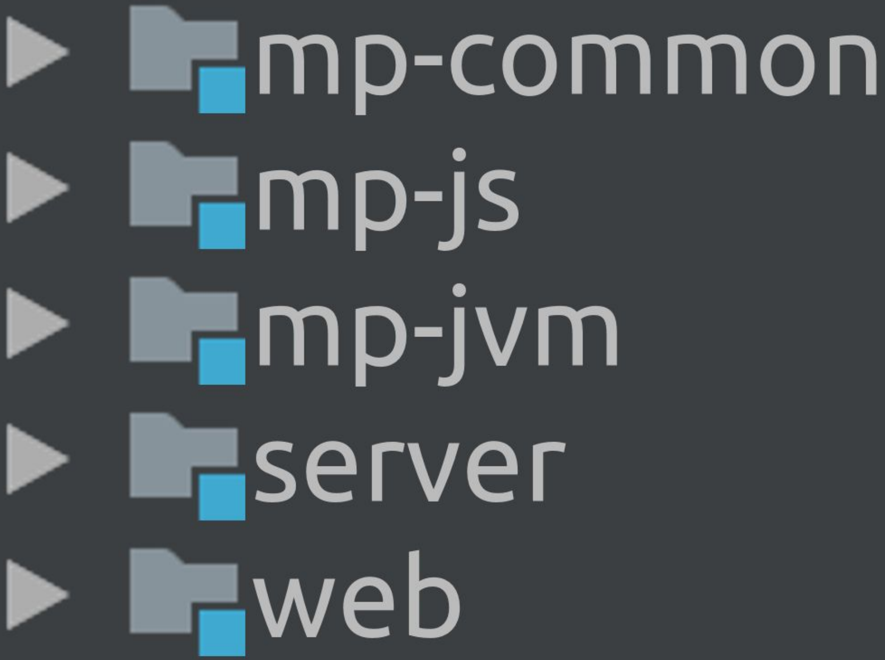
typealias

```
expect annotation class Test

actual typealias Test = org.junit.Test
```

typealias

```
expect class BigDecimal {
  fun divideAndRemainder(d: BigDecimal):
                                   Array<BigDecimal>
}

actual typealias BigDecimal = java.math.BigDecimal
```

Sample project



mp-common
mp-js
mp-jvm
server
web

Show me the code!

Code

https://github.com/kropp/kotlin-multiplatform-sample

Common modules

- Coroutines
- `kotlin.test`
- `kotlinx.serializaion`
- `kotlinx.html`

And many more libraries in the future

Recap

- Kotlin allows you to write the whole application in a single language
- Reuse business logic and data structures
- Integrate with respective platform

- Multiplatfom projects for JVM & JS available **now**
  Kotlin/Native coming soon

Thank you!

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Questions?

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JET
BRAINS