KOTLIN

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Agenda

Why Kotlin ?

Where is it used ?

Advantages and disadvantages

Applications of Kotlin

Hello world program

Introduction

Kotlin is a statically typed ,Object Oriented programming language that functions with Java

Kotlin is developed by JET BRAINS on 2010 with an aim to develop a language better than JAVA

It allows companies to gradually migrate from JAVA to Kotlin

THE ORIGIN

Kotlin is originated at JETBRAINS in 2010 with an aim to make a language better than JAVA

Kotlin has been open-source since 2012

The ‘Kotlin project’ in Git hub has more than 770 contributors out of which 100 members were external contributors

Kotlin’s audience grew steadily over the years until, in 2019, Google announced that Kotlin was its preferred language for Android app developers. It’s now the second most popular JVM language , behind Java.

WHY KOTLIN?

Kotlin is designed to run on a Java Virtual Machine and can run side by side with Java.

Although Kotlin first started as a language for Android development specifically, it quickly spread through the Java community because of its features and has since been used for many types of applications.

Why Kotlin?

Multiplatform

- Kotlin can be used in anywhere without any platform limitations .
- The code can be used both in android and IOS too!
- This makes it easier for developers to the same code for android as well as IOS or any other platform.

Works with JAVA

- Kotlin can be compiled into Java script without any hassle
- Kotlin uses Java ‘s libraries or frameworks
- This is because JVM or Java virtual machine can run Kotlin code because the kotlin compiler turns the code into a java byte code
- This helps developers use features of kotlin along with java

Data science

- Kotlin is often used for data science tasks, such as building data pipelines and putting machine learning models into production

Why Kotlin?

Syntax

- Kotlin uses lesser syntax than Java rather than JAVA
- The code in Kotlin less redundant than java making it more concise and easy to use

Safety

- Kotlin is designed to help avoid common coding errors that can break code and leave vulnerabilities in it
- Kotlin has a feature where it can eliminate null pointer exceptions using not-null assertion operator
- This reduces the risk off system crashing up to 70 percent as compared to JAVA

Your first ‘Hello world’ program!

Package specification should be at the top of the source file

The kotlin compiler starts executing the code from ‘main’ function(fun)

```
package hello

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

The function takes array of strings as a parameter and returns the unit

The println() function prints the given text inside the quotation marks

Variables in Kotlin

```
var name = "John"        // String (text)
val birthyear = 1975     // Int (number)

println(name)            // Print the value of name
println(birthyear)       // Print the value of birthyear
```

'Var' keyword is used for variables which can be changed

'val' is used for variables which cannot be changed

Kotlin can differentiate between string and variable

ADVANTAGES

- **Kotlin fixes a series of issues that Java suffers from:**

1)Null references are controlled by the type system.

2)No raw types.

3)Arrays in Kotlin are invariant.

4)Kotlin has proper function types, as opposed to Java's SAM-conversions.

5)Use-site variance without wildcards.

6)Kotlin does not have checked exceptions.

7) Code written in kotlin is smaller compared to java resulting fewer bugs

Disadvantages of KOTLIN

1)Kotlin is younger than Java and has a small developer community which means limited resources to find solutions.

2)Switching teams to Kotlin is difficult due to the steep learning curve.

3)Compared to Java, slower compilation time.

4)Experienced Kotlin developers are still a rarity in the market, so finding a good mentor for your team is quite tricky.

Real life applications of KOTLIN

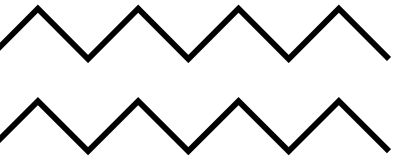
Google: Google has officially declared Kotlin as its first-class programming language for Android development. Not only that, but Google also uses Kotlin in their production code and continue their efforts to improve Kotlin experience

Pinterest: Pinterest, a unique and popular image sharing service reported using Kotlin in its Android app. Kotlin is the primary language for Android development at the company.

Corda: Corda is an open-source Blockchain platform for businesses and it is entirely built in Kotlin language.

Netflix: Netflix is the world's leading streaming entertainment service. They have rebuilt the current UI player in the Netflix Android app using 100% Kotlin.

There are so many apps and companies using Kotlin



THANK YOU

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