

KOTLIN

19CSE100 – PROBLEM SOLVING AND ALGORITHMIC THINKING PROGRAMMING LANGUAGE SURVEY ASSIGNMENT

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- **KOTLIN** is a Modern, concise and safe programming language.
- It is designed to interoperate fully with Java, and the JVM version of Kotlin's standard library depends on the Java Class Library but type inference allows its syntax to be more concise.



- ➊ **DEVELOPER:** JetBrains and Open Source Contributors
- ➋ **FIRST OFFICIAL RELEASE:** 15th February 2016.
- ➌ **TYPE OF LANGUAGE:** open-source statically typed, strong programming language (high level)
- ➍ **OS IT SUPPORTS:** CROSS PLATFORM



WHAT IS KOTLIN USED FOR?

- Kotlin is a programming language that can be used for a variety of purposes, such as developing mobile apps, web apps, and server-side applications.
- It can be used in conjunction with the Android operating system to create Android apps, and it can also be used to develop applications that run on the Java Virtual Machine (JVM) or JavaScript.
- In addition, Kotlin can be used to write scripts and plugins for other software programs.



- 1 **JAVA:** Kotlin was designed to be fully compatible with Java, which means that Java code can be easily integrated with Kotlin code and vice versa. This allows developers to leverage their existing Java knowledge and codebase when working with Kotlin.
- 2 **C hash:** Kotlin's type inference, null safety, and extension functions were inspired by C hash's similar features.
- 3 **Scala:** Kotlin's support for functional programming concepts and features, such as lambdas and higher-order functions, were inspired by Scala's similar features.
- 4 In addition to these languages, Kotlin also incorporates features from other programming languages such as Python and Swift.



Kotlin is a multi-paradigm programming language.

- **OBJECT-ORIENTED PROGRAMMING:** Kotlin supports features such as classes, interfaces, and inheritance which makes it object oriented programming language
- **FUNCTIONAL PROGRAMMING:** Kotlin also supports features such as lambdas, higher-order functions, and function types, which allows developers to write code in a more functional and declarative style.
- **IMPERATIVE PROGRAMMING:** Kotlin supports imperative programming features such as loops and control flow statements, which allows developers to write code that follows a more traditional, step-by-step approach.
- **GENERIC PROGRAMMING:** Kotlin support for generics allows developers to write code that can work with multiple types, making it more flexible and reusable.



FEW CURRENT LIFE APPLICATIONS OF KOTLIN

- ❶ KOTLIN being fully compaitable with existing Java based technology stacks makes it a great choice for creating server-side applications.
- ❷ It is mainly used by alot of Android Developers.
- ❸ Kotlin/Native is a technology for compiling Kotlin code to native binaries, which can run without a virtual machine. It is an LLVM based backend for the Kotlin compiler and native implementation of the Kotlin standard library.
- ❹ With support for JVM, Android, JavaScript, iOS, Linux, Windows, Mac and even embedded systems like STM32, Kotlin can handle any and all components of a modern application.



EXAMPLE CODE

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

Hello World!



- **fun** keyword is used to define a function in Kotlin. `main` is the name of the function and it is the entry point of the program.
- Any code in kotlin begins with a **main** function
- **println** is a function that prints a string to the console.
- In the parentheses, we pass a string "Hello World!" as an argument to the `println` function. Parameter specified is `Array<String>`.



Thank you

THANK YOU!!!!.



- <https://kotlinlang.org/>
- <https://developer.android.com/kotlin>
- [https://en.wikipedia.org/wiki/Kotlin_\(programming_language\)](https://en.wikipedia.org/wiki/Kotlin_(programming_language))

