# Introduction to Functional Interfaces in Java

## Introduction

In this tutorial, we will discuss \*\*Functional Interfaces\*\* in Java. We briefly touched on this topic in the previous tutorial, but here we will explore it in more detail.

## What are Functional Interfaces?

1. Functional interfaces have existed in Java since \*\*JDK 1.0\*\*, previously referred to as \*\***Single Abstract Method (SAM) Interfaces**\*\*.
2. The concept remains the same, but Java 8 introduced \*\***Functional Interfaces**\*\* as a **modernized category**.
3. **Definition**: According to Java documentation, a \*\*Functional Interface\*\* is any interface that has \*\***exactly one abstract method**\*\*.
4. These interfaces are annotated with \*\***@FunctionalInterface**\*\*, introduced in \*\*Java 8\*\*.

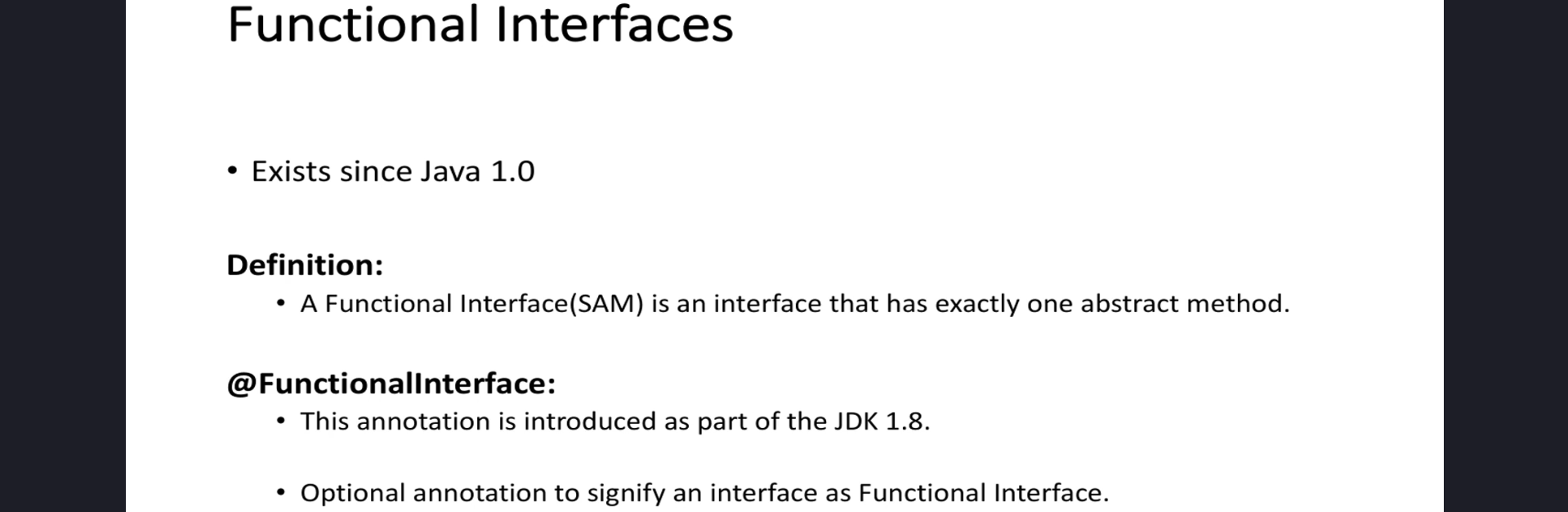
## Understanding @FunctionalInterface Annotation

- The \*\*@FunctionalInterface\*\* annotation is optional.

- It helps validate interfaces to ensure they contain only \*\*one\*\* abstract method.

- If an interface is annotated with \*\*@FunctionalInterface\*\* but contains multiple abstract methods, compilation will fail.

- This **annotation enforces** the contract of a functional interface.



## Functional Interfaces Introduced in Java 8

Java 8 introduced \*\*four primary functional interfaces\*\*:

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## Why Should You Learn Functional Interfaces?

- You may not use these interfaces directly in your projects, but they \*\*enhance Java Collections\*\* like \*\*List, Map, and Set\*\*.

- These enhancements make development \*\*faster and more efficient\*\*.

- Java 8 introduced several \*\*functional programming concepts\*\* that rely on these interfaces.

- Mastering these concepts will improve your ability to write \*\*concise and readable\*\* Java code.

## What’s Next?

- If this information seems overwhelming, don’t worry!

- Upcoming tutorials will include \*\*coding examples\*\* to explain each of these interfaces in detail.

- We will cover how to use these interfaces effectively in \*\*real-world Java applications\*\*.

## Conclusion

- Functional Interfaces are a \*\*key feature\*\* introduced in \*\*Java 8\*\* to support functional programming.

- They provide \*\*concise, reusable, and efficient\*\* ways to work with Java Collections and Streams.

- Understanding these interfaces will help you \*\*write modern Java code more effectively\*\*.

### \*\*End of the Tutorial\*\*

Thank you for watching!