

[Advanced Functional Thinking]

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Date

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Assignment - 1

Q1 Differentiate between Scala and Java.

Soln

SCALA

- It is a combination of both object-oriented and functional programming.
- It supports operator overloading.
- Scala variables are by default immutable type.
- It does not contain static keyword.
- Less readable due to nested code.
- The code is written in compact form.
- Scala is not backward compatible.

JAVA

- It is a general purpose object-oriented language.
- It does not support lazy evaluation.
- Java variables are by default mutable type.
- Java contains static keywords.
- It is more readable.
- The code is written in long form.
- Java is backward compatible.

Ques. Difference b/w Function & Method

Soln.	FUNCTION	METHOD
	<ul style="list-style-type: none">• A block of reusable code that performs a specific task.• May or May not accept parameters.• Does not have reference variables.• Called by its name.• Both object-oriented & non-object-oriented are compatible with the function.• As it is called individually and by its name, the data is passed externally or explicitly.	<ul style="list-style-type: none">• A function that is associated with an object or a class.• Often takes atleast one implicit parameter referring to the object itself.• Are called by reference variables.• Also called by its name, but associated with an object or class.• Only object-oriented programming languages can use methods.• As it is called depend dependently, the data is passed internally or implicitly.

Ques. Difference b/w OOPs & Functional Programming.

<u>Soln.</u> Object-Oriented Programming	Functional Programming
<ul style="list-style-type: none"> • Classes are used where instances of object are created. • Emphasizes state and mutable objects. • Objects encapsulates data and behaviour. • It uses loops for iteration. • Has three access specifiers. (public, private, & protected) • It does not support parallel programming 	<ul style="list-style-type: none"> • Emphasis on the use of functions where each each function performs a specific task. • Favours Immutable and avoids mutable state. • Functions operate on immutable data structures. • Encourages recursion for iteration, as a primary control structure. • Does not have any access specifiers. • It supports parallel programming.
eg: Java, C++ etc..	eg: Scala, Python etc..