"FUNCTIONAL PROGRAMMING"

By Prof. Sanjeev Dwivedi, Assistant Professor, Vidyalankar Institute of Technology
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Introduction to Functional Programming

The objective of the webinar was to create awareness about Declarative Programming paradigm, specially Functional programming which of late, has gained lot of importance and is now excessively used by product based companies like Twitter, Facebook, LinkedIn, Thought Works, Netflix etc., to streamline their development. (Scala, Clojure, Scheme and Haskell are prominent Functional Programming languages).

The webinar also intended to inform listeners, the side effects generated by the OOP code, and the factors responsible for it. It appealed the listeners to review the fundamental OOP properties (Encapsulation, Inheritance, Abstraction and Polymorphism) and evaluate their performance in ensuring scalability, concurrency and parallelism in Application.

Insights from the Event

Programming Paradigm

a] Imperative Programming: It is one of the oldest programming models that works on Turing principle. The programmer instructs the machine, how to change the state and features exclusive relations to machine architecture. It works by changing the programming state by statements, loop, variables etc. The advantage of this type of programming paradigm is its simplicity to program.
b] Procedural Programming: It enhances difficulty of programming where the flow of execution is from top to bottom fashion.
Ex. C, FORTRAN, Pascal, Basic etc.
c] Declarative Programming: Declarative programming is to be written in terms of expressions which basically expresses the things in terms of computational logic. It focuses more on what needs to be done, and not how it should be done. In other words it intends to declare the result without concentrating on how the result is produced.
d] Logical Programming: Logical Programming turns out to be an abstract model for computation. The desired result is declared as an answer to the question using its rules. The logical programming language is associated with AI and Machine Learning.
Ex. Prolog, Datalog, etc.

OOP Concepts

Object Oriented Programming is considered to be the crown jewel of Computer Science and is the ultimate solution to do coding.

OOP Complications

Alan Kay invented OOP, as mechanism to pass Messages and was intended to ensure simplicity, but OOP becomes problem when codebase becomes big enough and hence OOP code is Non-Deterministic and mutability here is inherent.

Key Takeaways

1. The speaker explained the differentiation between Imperative Programming and Declarative Programming.
2. One major thing he focused on was how the OOP was considered extensively in real world by giving some examples of C++, Java and Python.
3. Further, he brought to light that how OOP emphasizes more on data rather than on procedure.
4. Procedural programming is a programming paradigm, derived from structured programming, based on the concept of the procedure call.
5. The speaker also focused on how Functional Programming is used in situations where we must perform lots of different operations on the same set of data.
6. At the end of the session, the speaker shared his experience and suggested the students the scope of ML and AI in their respective fields.

Report compiled and edited by Prof. Amit K. Nerurkar, Prof. Mohini Chaudhari and CSI-VIT Team