STREAM IN JAVA

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I WHAT IS STREAM ?

A stream is a sequence of objects that supports various methods which can be pipelined to produce the desired result.

Introduced in Java 8.

The Stream API is usually used to process collections of objects.

Using Java streams allows you to move away from IMPERATIVE programming to DECLARATIVE programming.

- IMPERATIVE
- DECLARATIVE

Imperative programming is a software development approach in computer science that employs statements to modify the state of a program.

Functions are implicitly coded at every step necessary to solve a problem in imperative programming, hence pre-coded models aren't used.

In contrast to declarative programming, which tells the computer "what" the program should do,

imperative programming tells the machine "how" to do it.

LEARN MORE
---> https://www.javatpoint.com/what-is-imperative-programming

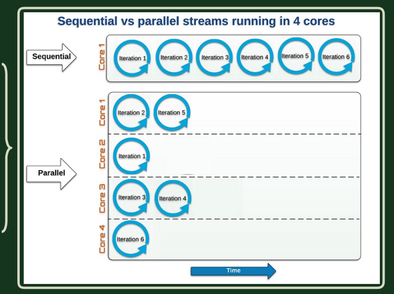
Generic Inteface in package java.util.stream

There are two types of streams

- sequential stream: A sequential stream is executed in a single thread running on one CPU core.

  The elements in the stream are processed sequentially in a single pass by the stream operations that are executed in the same thread.

- parallel stream: A parallel stream is executed by different threads, running on multiple CPU cores in a computer.

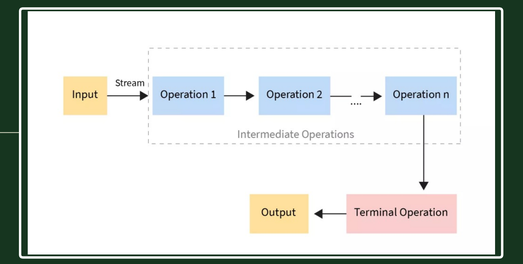


II THE FEATURES OF JAVA STREAM

- A stream is not a data structure instead it takes input from the Collections, Arrays or I/O channels.
- Streams don't change the original data structure, they only provide the result as per the pipelined methods

III OPERATIONS ON STREAMS

- INTERMEDIATE OPERATIONS — will transform a stream into another stream
  - .filter()
  - .limit()
  - .map()
  - .sorted()
  - .flatMap()
  - .distinct()
  - .skip()
  - .peek()
- TERMINAL OPERATIONS — will produce a result or side-effect
  - .anyMatch()
  - .allMatch()
  - .noneMatch()
  - .collect()
  - .count()
  - .findAny()
  - .findFirst()
  - .forEach()
  - .min()
  - .max()
  - .reduce()
  - .toArray()



IV CREATING JAVA STREAMS

V OPERATIONS