Let's break down the difference between a **Java process** and **Java threads** clearly:

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1. Java Process

- A **process** is an instance of a running Java program.
- Each process has its **own memory space** (heap, stack, method area - its own instance of JVM).
- Processes are **independent**; one process crashing does not affect others.
- **Communication** between processes requires inter-process communication (IPC) like files, sockets, or shared memory.
- Example: Running `java MyApp` in two separate terminal windows creates **two separate processes**. **Each has its own instance of JVM.**

Characteristics:

Feature	Java Process
Memory	Separate memory for each process
Isolation	High (processes don't share memory)
Communication	IPC needed
Overhead	Higher (each JVM instance consumes resources)
Crash impact	One process crash usually does not affect others

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2. Java Threads

- A **thread** is the smallest unit of execution in Java.
- All threads in a process **share the same memory space** (heap), but each thread has its own **stack**.

- Threads are **dependent**: if one thread crashes due to an exception and is unhandled, it may terminate the whole process.
- Communication between threads is **easy**, since they share memory.
- Example: Using `new Thread(() -> { ... }).start();` in a Java program creates a thread **inside the running process**.

Characteristics:

Feature	Java Thread
Memory	Shares process memory; each has its own stack
Isolation	Low (threads share memory, so synchronization is needed)
Communication	Simple, via shared variables
Overhead	Low (lighter than full processes)
Crash impact	Can affect the whole process if exception is unhandled

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Key Differences

Aspect	Process	Thread
Memory	Separate	Shared
Creation cost	High	Low
Communication	Difficult (IPC)	Easy (shared memory)
Fault tolerance	Independent	Dependent
JVM	Each process has its own JVM	Shares the same JVM

💡 **Analogy:**

- Process = **house**
- Threads = **people in the house**

- They share the same house (memory) but have their own rooms (stack).
- People can interact easily, but if the house catches fire, everyone is affected.