In Java, a semaphore is a synchronization mechanism used to control access to a shared resource by multiple threads. It is part of the java.util.concurrent package and is used to maintain a set of permits, allowing a specified number of threads to access the resource at a time. How it works:

* A semaphore has a fixed number of permits.
* A thread that wants to access the resource must acquire a permit by calling the acquire() method.
* If no permits are available, the thread will block until one is released.
* Once a thread finishes its task, it releases the permit using the release() method, allowing other threads to acquire it.