Thread :

The smallest unit or sequence of execution is known as a Thread.

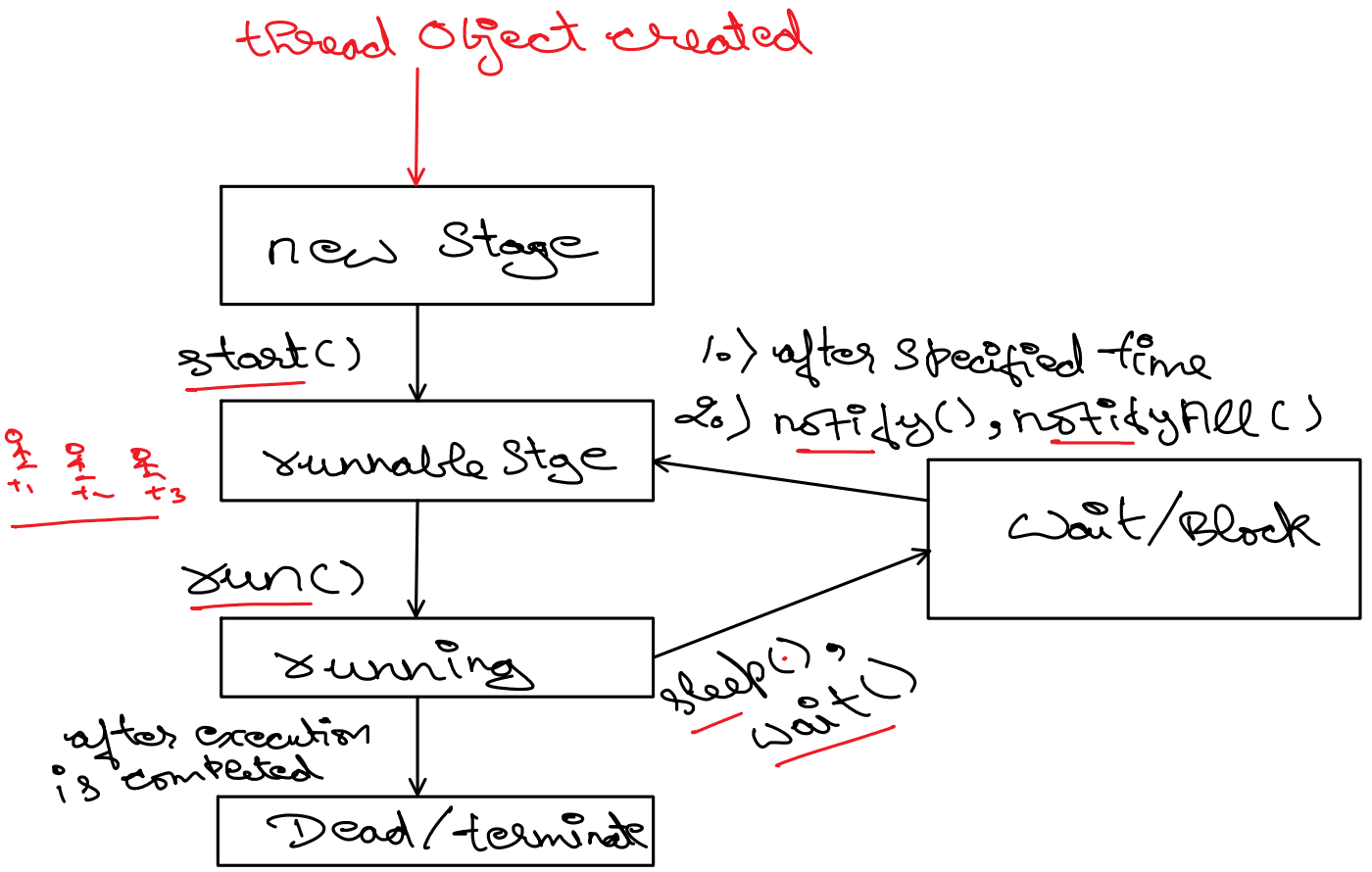
Note :

1. Every thread has its own stack and PC (Program Counter)
2. One Process can have multiple threads, it is known as multi-threading.
3. Multi-thread is required to achieve parallel execution. (that is to execute more than one instruction at a same time)
4. All the threads of the process share the resources of the process, That is all the threads share the same code segment, same data segment of a process. But will have a separate stack segment for execution

Thread Life Cycle :

new stage :	When a Thread is just created it is in new State, it remains to stay in the same stage until it is started.
Runnable Stage:	When a new thread is started, the thread goes to runnable stage, in this stage the thread is considered as ready for execution.
Running Stage:	The thread which is under execution is in the running stage.
Wait stage / Block stage	When the thread in the running is stopped, then the thread goes to the wait stage. The thread remains to be in the same stage until

	1. another thread signals to the waiting thread. 2. Timed Wait : it stays in this stage for a given specific time, after which the thread goes back to runnable stage.
Dead stage / Terminated Stage	A thread goes to dead stage once the given task is completed. (if thread reaches this stage the stack of the thread is removed)



Properties of Thread :

1. Thread ID
2. Thread Name
3. Thread Priority

In Java, we can create threads in two ways :

1. by inheriting Thread class.
2. by implementing Runnable interface.

In Java we have a class **java.lang.Thread** which helps us to create threads.

Note :

1. java.lang.Thread extends java.lang.Object class
2. java.lang.Thread implements Runnable interface

public class Thread extends Object implements Runnable

1st Method: By inheriting Thread Class

Step1 : class must extends Thread class.

Step2 : We can override run() method of thread class, to provide programmers desired implementation.

Example : refer : **workspace/threads/src/pack1**