Sri SAI RAM ENGINEERING COLLEGE
INSTITUTE OF TECHNOLOGY
West Tambaram, Chennai - 44

SAIRAM DIGITAL RESOURCES

YEAR III SEM V

CS8392

OBJECT ORIENTED PROGRAMMING
(Common to CSE, EEE, EIE, ICE, IT)

UNIT NO 4

MULTITHREADING AND GENERIC PROGRAMMING

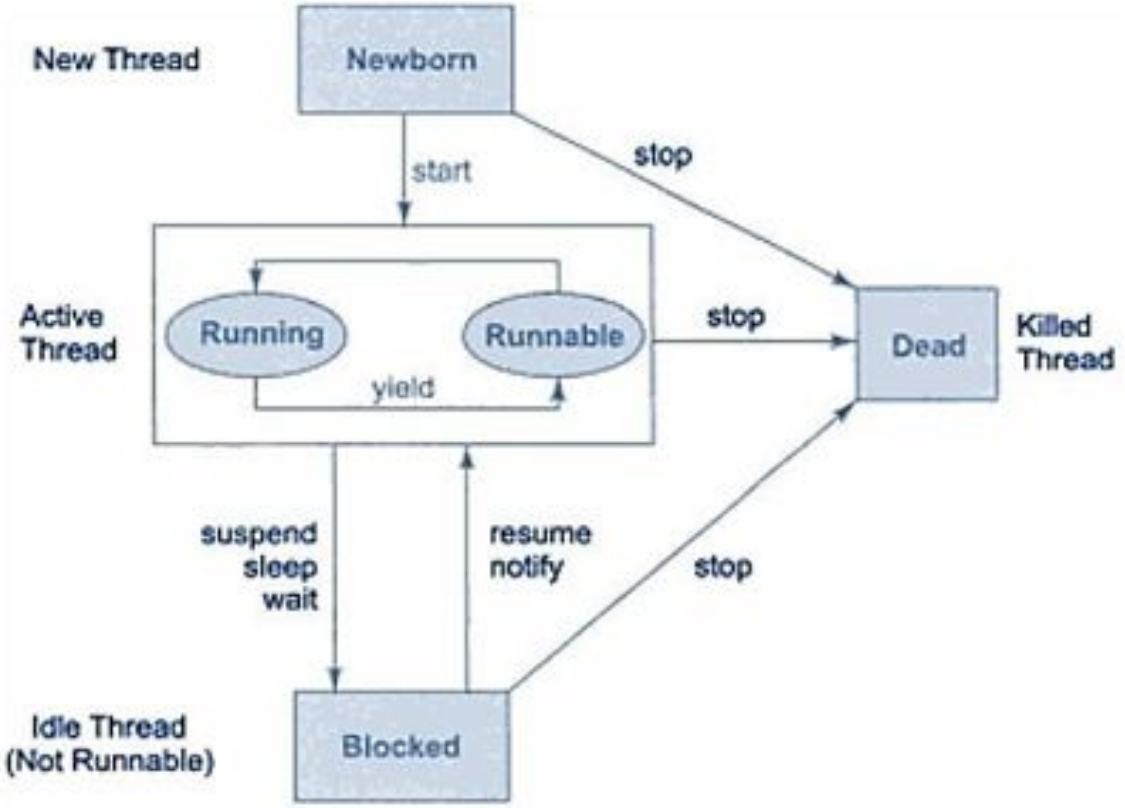
4.3 Thread Life Cycle

COMPUTER SCIENCE & ENGINEERING

Thread Life Cycle

A thread can be in one of the five states.

1. New / Newborn State
2. Runnable
3. Running
4. Non-Runnable (Blocked)
5. Terminated / Dead State



Thread Life Cycle

1. NewbornState

When a thread object is created a new thread is born and said to be in Newborn state.

2. Runnable State

If a thread is in this state it means that the thread is ready for execution and waiting for the availability of the processor. If all threads in queue are of same priority then they are given time slots for execution in round robin fashion

Thread Life Cycle

3. RunningState

It means that the processor has given its time to the thread for execution. A thread keeps running until the following conditions occurs.Thread give up its control on its own and it can happen in the following situations.

A thread gets suspended using suspend() method which can only be revived with resume()method.

A thread is made to sleep for a specified period of time using sleep(time) method, where time in milliseconds.

A thread is made to wait for some event to occur using wait () method. In this case a thread can be scheduled to run again using notify ()method.

A thread is pre-empted by a higher priority thread

Thread Life Cycle

4. Blocked State

If a thread is prevented from entering into runnable state and subsequently running state, then a thread is said to be in Blocked state.

5. Dead State

A runnable thread enters the Dead or terminated state when it completes its task

The Main Thread

When run any java program, the program begins to execute its code from the main method. Therefore, the JVM creates a thread to start executing the code present in main method. This thread is called as main thread. The main thread is automatically created, you can control it by obtaining a reference to it by calling currentThread() method.

Two important things to know about main thread are,

1. · It is the thread from which other threads will be produced.
2. · main thread must be always the last thread to finish execution.

Simple Program

```
class MainThread {
        public static void main(String[] args)
        {
         Thread t=Thread.currentThread();
         t.setName("MainThread");
         System.out.println("Name of thread is" +t);
        }
       }
```

```
D:\cse>javac TextFieldExample.java

D:\cse>java MainThread
Name of thread is Thread[MainThread,5,main]
```

Video Link

https://www.youtube.com/watch?v=82pwIB8Rv2w