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**Subject:- Advanced Java Programming Lab**

## **Experiment no.10**

**Aim:-** Implementation of Thread Life Cycle.

**Program A):-**

**Input:-**

```
package com.AJPEperiments;

class thread implements Runnable {
    public void run(){
        try{
            Thread.sleep(1500);
        }
        catch(InterruptedException e){
            e.printStackTrace();
        }
        System.out.println("State of thread1 while it called join() method on thread2 - "+
Test.thread1.getState());
        try{
            Thread.sleep(200);
        }catch(InterruptedException e){
            e.printStackTrace();
        }
    }
}

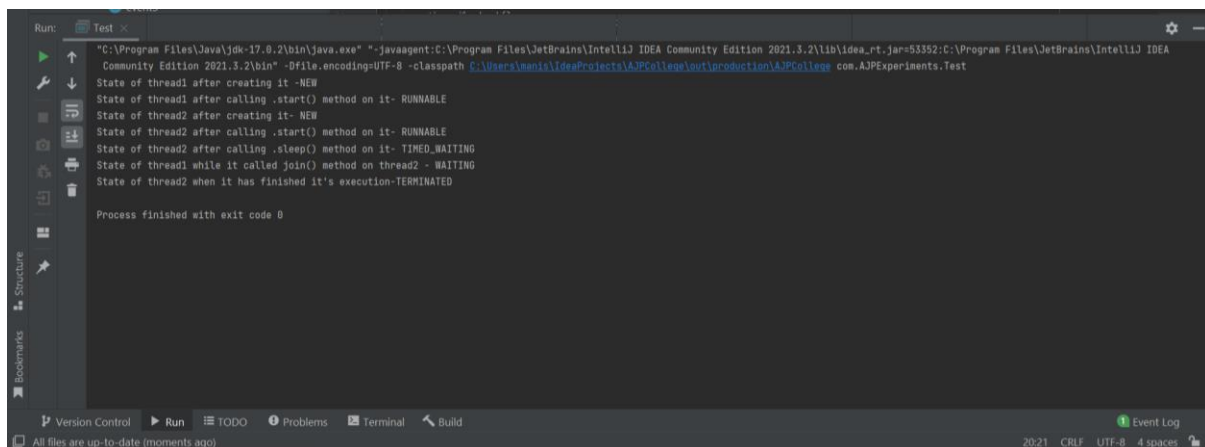
class Test implements Runnable{
    public static Thread thread1;
    public static Test obj;
    public static void main(String args[]){
        obj=new Test();
        thread1 = new Thread(obj);
        System.out.println("State of thread1 after creating it -"+ thread1.getState());
        thread1.start();
        System.out.println("State of thread1 after calling .start() method on it-
"+thread1.getState());
        thread1.getState();
    }
}
```

```

    }
    public void run(){
        thread myThread = new thread();
        Thread thread2 = new Thread(myThread);
        System.out.println("State of thread2 after creating it- "+thread2.getState());
        thread2.start();
        System.out.println("State of thread2 after calling .start() method on it-
"+thread2.getState());
        try{
            Thread.sleep(200);
        }catch(InterruptedException e){
            e.printStackTrace();
        }
        System.out.println("State of thread2 after calling .sleep() method on it-
"+thread2.getState());
        try{
            thread2.join();
        }catch (InterruptedException e){
            e.printStackTrace();
        }
        System.out.println("State of thread2 when it has finished it's execution-
"+thread2.getState());
    }
}

```

## Output:-



```

Run: Test
"C:\Program Files\Java\jdk-17.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\lib\idea_rt.jar=53352:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\bin" -Dfile.encoding=UTF-8 -classpath C:\Users\manish\IdeaProjects\A3PCollege\out\production\A3PCollege com.A3PEXperiments.Test
State of thread1 after creating it -NEW
State of thread1 after calling .start() method on it- RUNNABLE
State of thread2 after creating it- NEW
State of thread2 after calling .start() method on it- RUNNABLE
State of thread2 after calling .sleep() method on it- TIMED_WAITING
State of thread1 while it called join() method on thread2 - WAITING
State of thread2 when it has finished it's execution-TERMINATED

Process finished with exit code 0

```

## **Program B):-**

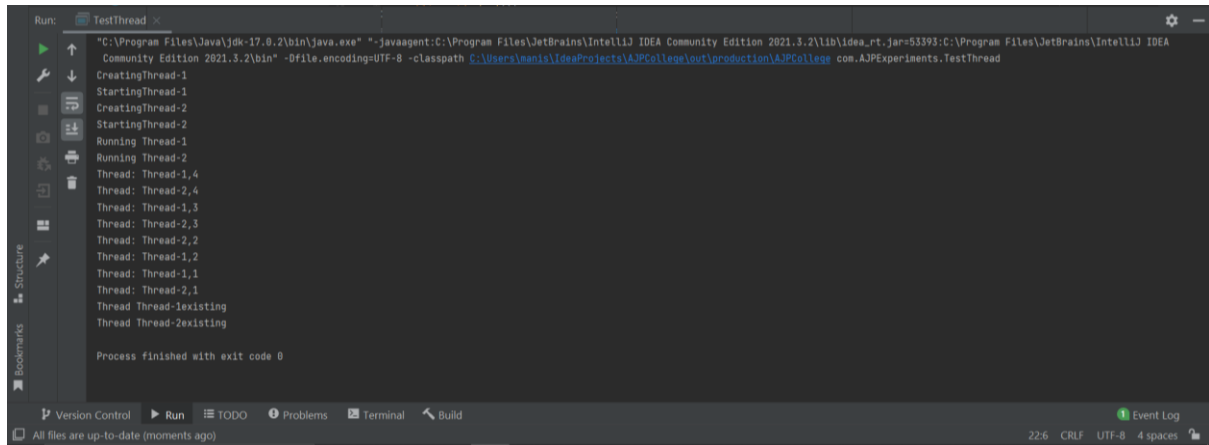
### **Input:-**

```
package com.AJPExperiments;
```

```
class RunnableDemo1 implements Runnable{
    private Thread t;
    private String threadName;
    RunnableDemo1(String name){
        threadName = name;
        System.out.println("Creating" + threadName);
    }
    public void run(){
        System.out.println("Running " + threadName);
        try{
            for(int i= 4; i>0; i--){
                System.out.println("Thread: " + threadName+" "+i);
                Thread.sleep(50);
            }
        }
        catch(InterruptedException e){
            System.out.println("Thread " +threadName+"interrupted.");
        }
        System.out.println("Thread " +threadName+"existing");
    }
    public void start(){
        System.out.println("Starting"+threadName);
        if(t==null){
            t=new Thread(this,threadName);
            t.start();
        }
    }
}

class TestThread{
    public static void main(String args[]){
        RunnableDemo1 R1= new RunnableDemo1("Thread-1");
        R1.start();
        RunnableDemo1 R2 = new RunnableDemo1("Thread-2");
        R2.start();
    }
}
```

## Output:-



```
Run: TestThread x
"C:\Program Files\Java\jdk-17.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\lib\idea_rt.jar=53393:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\bin" -Dfile.encoding=UTF-8 -classpath C:\Users\manis\IdeaProjects\AJPCollege\out\production\AJPCollege com.AJPExperiments.TestThread
CreatingThread-1
StartingThread-1
CreatingThread-2
StartingThread-2
Running Thread-1
Running Thread-2
Thread: Thread-1,4
Thread: Thread-2,4
Thread: Thread-1,3
Thread: Thread-2,3
Thread: Thread-2,2
Thread: Thread-1,2
Thread: Thread-1,1
Thread: Thread-2,1
Thread Thread-1exiting
Thread Thread-2exiting
Process finished with exit code 0
```

Practical Performance (4)	Writeup & Oral (4)	Attendance (2)	Total (10)