

Multithreading

Thread Control Mechanism



Agenda

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Thread Control Mechanism

2

3

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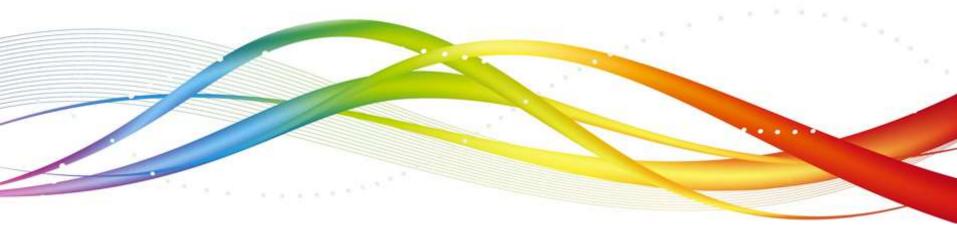
Objectives

At the end of this module, you will be able to:

Thread Control Mechanism



Thread Control Mechanism



Control Thread Execution

- Two ways exist by which you can determine whether a thread has finished:
- The isAlive() method will return true if the thread upon which it is called is still running; else it will return false
- The join() method waits until the thread on which it is called terminates.
- Syntax:
- final boolean isAlive()
- final void join() throws InterruptedException

```
public class DemoThread implements Runnable
String name;
Thread thread;
DemoThread(String threadname) {
name = threadname;
thread = new Thread(this, name);
System.out.println("New Thread: " + thread);
thread.start();
```

```
public void run() {
try {
      for(int i=5; i>0; i--) {
System.out.println("Child Thread: " + i);
Thread.sleep(1000);}
catch (InterruptedException e) {
        System.out.println(name +
"Interrupted");
System.out.println(name + "Exiting");
```

```
public class MultiThreadImpl {
public static void main(String args[]) {
DemoThread t1 = new DemoThread("One");
DemoThread t2 = new DemoThread("Two");
DemoThread t3 = new DemoThread("Three");
System.out.println("Thread One is alive: " +
t1.thread.isAlive());
System.out.println("Thread Two is alive: "
t2.thread.isAlive());
System.out.println("Thread Three is alive: "
+ t1.thread.isAlive());
```

```
try {
      System.out.println("Waiting for child
threads to finish");
      t1.thread.join();
      t2.thread.join();
      t3.thread.join();
catch (InterruptedException e) {
      System.out.println("Main thread
interrupted");
```

```
System.out.println("Thread One is alive: " +
t1.thread.isAlive());
System.out.println("Thread One is alive: " +
t1.thread.isAlive());
System.out.println("Thread One is alive: "
t1.thread.isAlive());
System.out.println("Main thread exiting");
```





Output:

New Thread: Thread[One, 5, main]
New Thread: Thread[Two, 5, main]

Child Thread: 5

New Thread: Thread[Three, 5, main]

Thread One is alive: true
Thread Two is alive: true
Thread Three is alive: true

Waiting for child threads to finish

Child Thread: 5
Child Thread: 4
Child Thread: 4

Child Thread: 5

Child Thread: 4

Continued....

Child Thread: 3
Child Thread: 3

Child Thread: 3

Child Thread: 2

Child Thread: 2

Child Thread: 2

Child Thread: 1

Child Thread: 1

Child Thread: 1

ThreeExiting

OneExiting

TwoExiting

Thread One is alive: false

Thread One is alive: false

Thread One is alive: false

Main thread exiting

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Assignment



Summary

• Different Thread control mechanisms



Thank You

