Thread Methods

Following is the list of important methods available in the Thread class.

Sr.No.	Method & Description
1	**public void start()** Starts the thread in a separate path of execution, then invokes the run() method on this Thread object.
2	**public void run()** If this Thread object was instantiated using a separate Runnable target, the run() method is invoked on that Runnable object.
3	**public final void setName(String name)** Changes the name of the Thread object. There is also a getName() method for retrieving the name.
4	**public final void setPriority(int priority)** Sets the priority of this Thread object. The possible values are between 1 and 10.
5	**public final void setDaemon(boolean on)** A parameter of true denotes this Thread as a daemon thread.
6	**public final void join(long millisec)** The current thread invokes this method on a second thread, causing the current thread to block until the second thread terminates or the specified number of milliseconds passes.
7	**public void interrupt()** Interrupts this thread, causing it to continue execution if it was blocked for any reason.

8	**public final boolean isAlive()** Returns true if the thread is alive, which is any time after the thread has been started but before it runs to completion.

The previous methods are invoked on a particular Thread object. The following methods in the Thread class are static. Invoking one of the static methods performs the operation on the currently running thread.

Sr.No.	Method & Description
1	**public static void yield()** Causes the currently running thread to yield to any other threads of the same priority that are waiting to be scheduled.
2	**public static void sleep(long millisec)** Causes the currently running thread to block for at least the specified number of milliseconds.
3	**public static boolean holdsLock(Object x)** Returns true if the current thread holds the lock on the given Object.
4	**public static Thread currentThread()** Returns a reference to the currently running thread, which is the thread that invokes this method.
5	**public static void dumpStack()** Prints the stack trace for the currently running thread, which is useful when debugging a multithreaded application.

Example

The following ThreadClassDemo program demonstrates some of these methods of the Thread class. Consider a class **DisplayMessage** which implements **Runnable** −

```
// File Name : DisplayMessage.java
// Create a thread to implement Runnable

public class DisplayMessage implements Runnable {
   private String message;

   public DisplayMessage(String message) {
      this.message = message;
   }

   public void run() {
      while(true) {
         System.out.println(message);
      }
   }
}
```

Following is another class which extends the Thread class −

```
// File Name : GuessANumber.java
// Create a thread to extentd Thread

public class GuessANumber extends Thread {
   private int number;
   public GuessANumber(int number) {
      this.number = number;
   }

   public void run() {
      int counter = 0;
      int guess = 0;
      do {
         guess = (int) (Math.random() * 100 + 1);
         System.out.println(this.getName() + " guesses " +
guess);
         counter++;
      } while(guess != number);
      System.out.println("** Correct!" + this.getName() + "in" +
counter + "guesses.**");
   }
}
```

Following is the main program, which makes use of the above-defined classes −

```
// File Name : ThreadClassDemo.java
public class ThreadClassDemo {

   public static void main(String [] args) {
```

```
        Runnable hello = new DisplayMessage("Hello");
        Thread thread1 = new Thread(hello);
        thread1.setDaemon(true);
        thread1.setName("hello");
        System.out.println("Starting hello thread...");
        thread1.start();

        Runnable bye = new DisplayMessage("Goodbye");
        Thread thread2 = new Thread(bye);
        thread2.setPriority(Thread.MIN_PRIORITY);
        thread2.setDaemon(true);
        System.out.println("Starting goodbye thread...");
        thread2.start();

        System.out.println("Starting thread3...");
        Thread thread3 = new GuessANumber(27);
        thread3.start();
        try {
           thread3.join();
        } catch (InterruptedException e) {
           System.out.println("Thread interrupted.");
        }
        System.out.println("Starting thread4...");
        Thread thread4 = new GuessANumber(75);

        thread4.start();
        System.out.println("main() is ending...");
    }
}
```