```
 1: // $Id: hellorunnable.java,v 1.11 2013-08-12 19:24:37-07 - - $
 2:
 3: //
 4: // Hello World example using two threads.
 5: // class greeter implements Runnable.
 6: //
 7:
 8: import static java.lang.System.*;
 9: import static java.lang.String.*;
10:
11: class hellorunnable {
12:     static long nanostart = nanoTime();
13:
14:     static void print (String fmt, Object... args) {
15:         Thread self = Thread.currentThread();
16:         double millisec = (nanoTime() - nanostart) / 1e6;
17:         String ident = format ("%10.3f: %s(%d): ",
18:                                 millisec, self.getName(), self.getId());
19:         String message = format (fmt, args);
20:         out.println (ident + message);
21:         out.flush();
22:     }
23:
24:     static class greeter implements Runnable {
25:         String threadname;
26:         long delay_msec;
27:         greeter (String _threadname, int _delay_msec) {
28:             threadname = _threadname;
29:             delay_msec = _delay_msec;
30:         }
31:         public void run() {
32:             Thread self = Thread.currentThread();
33:             self.setName (threadname);
34:             print ("starting");
35:             for (int count = 0; count < 10; ++count) {
36:                 try {
37:                     Thread.sleep (delay_msec);
38:                 }catch (InterruptedException exn) {
39:                     print ("interrupted: %s", exn.getMessage());
40:                 }
41:                 print ("slept %d msec, %dth time", delay_msec, count);
42:             }
43:             print ("finished");
44:         }
45:     }
46:
47:     public static void main (String[] args) {
48:         print ("starting");
49:         Thread hello = new Thread (new greeter ("Hello", 500));
50:         Thread world = new Thread (new greeter ("World", 800));
51:         hello.start();
52:         world.start();
53:         print ("finished");
54:     }
55:
56: }
57:
58: //TEST// runprog -x hellorunnable.lis hellorunnable
59: //TEST// mkpspdf hellorunnable.ps hellorunnable.java* hellorunnable.lis
60:
```

```
1: * @@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@ mkc: starting hellorunnable.java
2: * hellorunnable.java: $Id: hellorunnable.java,v 1.11 2013-08-12
3: 19:24:37-07 - - $
4: * javac -Xlint hellorunnable.java
5: * jar cfm hellorunnable Manifest hellorunnable$greeter.class
6: hellorunnable.class
7: * chmod +x hellorunnable
8: * rm -f hellorunnable$greeter.class hellorunnable.class
9: * @@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@ mkc: finished hellorunnable.java
```

```
  1:
  2: ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
  3: log: hellorunnable.log
  4: ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
  5:
  6:      1  Script  : /afs/cats.ucsc.edu/courses/cmps012b-wm/bin/runprog
  7:      2  limit c :      0 max core file size (KB)
  8:      3  limit f : 4194303 max output file size (KB)
  9:      4  limit t : 4294967295 max CPU time (sec)
 10:      5  stdin   : /dev/null
 11:      6  stdout  : hellorunnable.out
 12:      7  stderr  : hellorunnable.err
 13:      8  log     : hellorunnable.log
 14:      9  listing : hellorunnable.lis
 15:     10  Command : hellorunnable
 16:     11  starting: pid 9244: 19:32:33.00
 17:     12  finished: pid 9244: 19:32:41.00, real 8.00, user 0.08, sys 0.02
 18:     13  pstatus: 0x0000 EXIT STATUS = 0
 19:
 20: ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
 21: stdin: /dev/null
 22: ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
 23:
 24:
 25: ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
 26: stdout: hellorunnable.out
 27: ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
 28:
 29:      1        0.048: main(1): starting
 30:      2        8.414: main(1): finished
 31:      3        8.678: Hello(8): starting
 32:      4        8.704: World(9): starting
 33:      5      510.066: Hello(8): slept 500 msec, 0th time
 34:      6      809.348: World(9): slept 800 msec, 0th time
 35:      7     1010.634: Hello(8): slept 500 msec, 1th time
 36:      8     1511.206: Hello(8): slept 500 msec, 2th time
 37:      9     1609.915: World(9): slept 800 msec, 1th time
 38:     10     2011.743: Hello(8): slept 500 msec, 3th time
 39:     11     2410.462: World(9): slept 800 msec, 2th time
 40:     12     2512.291: Hello(8): slept 500 msec, 4th time
 41:     13     3012.858: Hello(8): slept 500 msec, 5th time
 42:     14     3211.025: World(9): slept 800 msec, 3th time
 43:     15     3513.363: Hello(8): slept 500 msec, 6th time
 44:     16     4011.576: World(9): slept 800 msec, 4th time
 45:     17     4013.947: Hello(8): slept 500 msec, 7th time
 46:     18     4514.495: Hello(8): slept 500 msec, 8th time
 47:     19     4812.143: World(9): slept 800 msec, 5th time
 48:     20     5015.018: Hello(8): slept 500 msec, 9th time
 49:     21     5015.495: Hello(8): finished
 50:     22     5612.693: World(9): slept 800 msec, 6th time
 51:     23     6413.255: World(9): slept 800 msec, 7th time
 52:     24     7253.086: World(9): slept 800 msec, 8th time
 53:     25     8053.707: World(9): slept 800 msec, 9th time
 54:     26     8054.247: World(9): finished
 55:
 56: ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
 57: stderr: hellorunnable.err
 58: ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
 59:
```