

```
1: // $Id: raceclick.java,v 1.2 2018-05-17 16:00:46-07 - - $
2:
3: //
4: // Show race conditions between two threads that click an int.
5: // Unsynchronized clicking the count many times each.
6: //
7:
8: import java.text.DecimalFormat;
9: import static java.lang.System.*;
10:
11: class raceclick {
12:     static final long CYCLES = (long) 1e8;
13:     static DecimalFormat formatter = new DecimalFormat ("#,###");
14:
15:     static long count = 0;
16:
17:     static class racer implements Runnable {
18:         int ident;
19:         racer (int idinit) {
20:             ident = idinit;
21:         }
22:         public void run() {
23:             out.printf ("racer %d starting, count = %12s\n",
24:                 ident, formatter.format (count));
25:             out.flush();
26:             for (int itor = 0; itor < CYCLES; ++itor) ++count;
27:             out.printf ("racer %d finished, count = %12s\n",
28:                 ident, formatter.format (count));
29:             out.flush();
30:         }
31:     }
32:
33:     public static void main (String[] args) {
34:         out.printf ("main starting, count =      %12s, CYCLES = %s\n",
35:             formatter.format (count),
36:             formatter.format (CYCLES));
37:         out.flush();
38:         Thread[] threads = new Thread[4];
39:         for (int index = 0; index < threads.length; ++index) {
40:             threads[index] = new Thread (new racer (index));
41:             threads[index].start();
42:         }
43:         out.printf ("main finished, count =      %12s\n",
44:             formatter.format (count));
45:         out.flush();
46:     }
47:
48: }
49:
50: //TEST// alias TIME='/usr/bin/time -f "%E elapsed, %S kernel, %U user"'
51: //TEST// for i in 1 2 3 4
52: //TEST// do
53: //TEST//     TIME raceclick >raceclick.out$i 2>&1
54: //TEST// done
55: //TEST// more raceclick.out? >raceclick.out </dev/null
56: //TEST// rm raceclick.out?
57: //TEST// mkpspdf raceclick.ps raceclick.java* raceclick.out
58:
```

[illegible]

```
1: ::::::::::::::
2: raceclick.out1
3: ::::::::::::::
4: main starting, count =          0, CYCLES = 100,000,000
5: racer 0 starting, count =          0
6: racer 1 starting, count =        25,674
7: racer 2 starting, count =       10,978,483
8: main finished, count =        23,527,396
9: racer 3 starting, count =       25,222,097
10: racer 0 finished, count =      100,074,970
11: racer 2 finished, count =      101,148,977
12: racer 1 finished, count =      101,936,797
13: racer 3 finished, count =      125,718,198
14: 0:00.28 elapsed, 0.03 kernel, 0.41 user
15: ::::::::::::::
16: raceclick.out2
17: ::::::::::::::
18: main starting, count =          0, CYCLES = 100,000,000
19: racer 0 starting, count =          0
20: racer 1 starting, count =        23,552
21: racer 2 starting, count =       1,354,626
22: main finished, count =       29,944,722
23: racer 3 starting, count =       51,940,109
24: racer 1 finished, count =       43,780,840
25: racer 3 finished, count =       79,808,661
26: racer 2 finished, count =      108,619,013
27: racer 0 finished, count =      120,619,883
28: 0:00.29 elapsed, 0.02 kernel, 0.45 user
29: ::::::::::::::
30: raceclick.out3
31: ::::::::::::::
32: main starting, count =          0, CYCLES = 100,000,000
33: racer 0 starting, count =          0
34: racer 1 starting, count =          0
35: racer 2 starting, count =         7,965
36: main finished, count =        153,968
37: racer 3 starting, count =        995,062
38: racer 0 finished, count =       98,942,646
39: racer 3 finished, count =      109,138,994
40: racer 1 finished, count =      111,432,138
41: racer 2 finished, count =      116,743,727
42: 0:00.33 elapsed, 0.02 kernel, 0.54 user
43: ::::::::::::::
44: raceclick.out4
45: ::::::::::::::
46: main starting, count =          0, CYCLES = 100,000,000
47: racer 0 starting, count =          0
48: main finished, count =          0
49: racer 1 starting, count =          0
50: racer 3 starting, count =       155,339
51: racer 2 starting, count =       2,592,728
52: racer 0 finished, count =       97,846,596
53: racer 3 finished, count =       92,581,986
54: racer 1 finished, count =      103,577,511
55: racer 2 finished, count =      108,314,826
56: 0:00.42 elapsed, 0.02 kernel, 0.72 user
```