

```

1  /**
2  * Constructor.
3  * @param modem number of modems.
4  * @param avgLen average length of a call.
5  * @param callIntrvl the average time between calls.
6  */
7  public ModemSim( int modems, double avgLen,
8                  long callIntrvl )
9  {
10     eventSet    = new BinaryHeap( new Event( ) );
11     freeModems  = modems;
12     avgCallLen  = avgLen;
13     freqOfCalls = callIntrvl;
14     r           = new Random( );
15     nextCall( freqOfCalls ); // Schedule first call
16 }

```

Figure 13.7 ModemSim constructor

The modem simulation class, `ModemSim`, is shown in Figure 13.6. It consists of a host of data fields, a constructor, and two methods. The data fields include a random-number object `r` shown at line 22. At line 23, the `eventSet` is maintained as a `PriorityQueue` of `Event` objects. There are three remaining data fields. One is `freeModems`, which is initially the number of modems in the simulation but which changes as users connect and hangup. The other two are `avgCallLen` and `freqOfCalls`, which are parameters of the simulation. Recall that a dial-in attempt will be made every `freqOfCalls` ticks. The constructor at lines 15 and 16 that is implemented in Figure 13.7 initializes these fields and places the first arrival in the `eventSet` priority queue.

```

1      // Used by nextCall only
2  private int  userNum = 0;
3  private long nextCallTime = 0;
4
5  /**
6  * Place a new DIAL_IN event into the event queue.
7  * Then advance the time when next DIAL_IN event will
8  * occur. In practice, we would use a random number to
9  * set the time.
10 */
11 private void nextCall( long delta )
12 {
13     eventSet.insert( new Event( userNum++, nextCallTime,
14                               Event.DIAL_IN ) );
15     nextCallTime += delta;
16 }

```

Figure 13.8 `nextCall`: Place a new `DIAL_IN` event into the event queue and advance the time when the next `DIAL_IN` event will occur