```
 1: // $Id: sendreceive.java,v 1.7 2012-06-06 15:00:56-07 - - $
 2:
 3: //
 4: // Simple send receive example.  Start up two processes,
 5: // receiver (server) which accepts messages and prints them,
 6: // and a sender (client) which send messages.  Both loop
 7: // indefinitely until killed.
 8: //    Usage: sendreceive port
 9: // If the port is positive, server receiver.
10: // If the port is negative, client sender.
11: //
12:
13: import java.io.*;
14: import java.net.*;
15: import java.util.*;
16: import java.util.concurrent.*;
17: import static java.lang.System.*;
18:
19: class sendreceive {
20:
21:     static void server_receiver (int port) {
22:         try {
23:             ServerSocket server = new ServerSocket (port);
24:             print_server_socket ("server: server socket", server);
25:             Socket client = server.accept();
26:             print_socket ("server: client socket", client);
27:             Scanner sockin = new Scanner (client.getInputStream());
28:             for (;;) {
29:                 String line = sockin.nextLine();
30:                 out.printf ("server: %s%n", line);
31:             }
32:         }catch (IOException exn) {
33:             out.printf ("server: %s%n", exn);
34:         }
35:     }
36:
37:     static void client_sender (int port) {
38:         try {
39:             Socket server = new Socket ("localhost", port);
40:             print_socket ("client: server socket", server);
41:             PrintWriter sockout =
42:                       new PrintWriter (server.getOutputStream());
43:             for (int count = 0; ; ++count) {
44:                 String line = "Message " + count;
45:                 out.printf ("client: %s%n", line);
46:                 sockout.printf ("%s%n", line);
47:                 sockout.flush();
48:                 if (sockout.checkError()) {
49:                     out.printf ("sender: error: %s%n", server);
50:                     break;
51:                 }
52:                 try {
53:                     Thread.currentThread().sleep (1000);
54:                 }catch (InterruptedException exn) {
55:                     out.printf ("client: %s%n", exn);
56:                 }
57:             }
58:         }catch (IOException exn) {
59:             out.printf ("client: %s%n", exn);
60:         }
61:     }
62:
```

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63:
64:     static void print_server_socket (String ident, ServerSocket socket) {
65:         out.printf ("%s: %s%n", ident, socket);
66:         out.printf ("%s: %s%n", "InetAddress", socket.getInetAddress());
67:         out.printf ("%s: %s%n", "LocalPort", socket.getLocalPort());
68:     }
69:
70:     static void print_socket (String ident, Socket socket) {
71:         out.printf ("%s: %s%n", ident, socket);
72:         out.printf ("%s: %s%n", "InetAddress", socket.getInetAddress());
73:         out.printf ("%s: %s%n", "LocalAddress", socket.getLocalAddress());
74:         out.printf ("%s: %s%n", "LocalPort", socket.getLocalPort());
75:         out.printf ("%s: %s%n", "Port", socket.getPort());
76:     }
77:
78:     public static void main (String[] args) {
79:         int port = Integer.parseInt (args[0]);
80:         if (port > 0) server_receiver (port);
81:                 else client_sender (- port);
82:     }
83: }
84:
```

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 1:
 2: :::::::::::::::
 3: sendreceive.+8888.log
 4: :::::::::::::::
 5:
 6: Script started on Wed Jun  6 14:56:46 2012
 7: bash-3.2$ sendreceive 8888
 8: server: server socket: ServerSocket[addr=0.0.0.0/0.0.0.0,port=0,localport=8888]
 9: InetAddress: 0.0.0.0/0.0.0.0
10: LocalPort: 8888
11: server: client socket: Socket[addr=/127.0.0.1,port=49217,localport=8888]
12: InetAddress: /127.0.0.1
13: LocalAddress: /127.0.0.1
14: LocalPort: 8888
15: Port: 49217
16: server: Message 0
17: server: Message 1
18: server: Message 2
19: server: Message 3
20: server: Message 4
21: Exception in thread "main" java.util.NoSuchElementException: No line found
22:         at java.util.Scanner.nextLine(Scanner.java:1516)
23:         at sendreceive.server_receiver(sendreceive.java:29)
24:         at sendreceive.main(sendreceive.java:79)
25: bash-3.2$ exit
26:
27: Script done on Wed Jun  6 14:57:23 2012
28:
29: :::::::::::::::
30: sendreceive.-8888.log
31: :::::::::::::::
32:
33: Script started on Wed Jun  6 14:57:06 2012
34: bash-3.2$ sendreceive -8888
35: client: server socket: Socket[addr=localhost/127.0.0.1,port=8888,localport=49217
]
36: InetAddress: localhost/127.0.0.1
37: LocalAddress: /127.0.0.1
38: LocalPort: 49217
39: Port: 8888
40: client: Message 0
41: client: Message 1
42: client: Message 2
43: client: Message 3
44: client: Message 4
45: bash-3.2$ exit
46:
47: Script done on Wed Jun  6 14:57:21 2012
```

```
 1:
 2: :::::::::::::::
 3: sendreceive.+9999.log
 4: :::::::::::::::
 5:
 6: Script started on Wed Jun  6 14:57:36 2012
 7: bash-3.2$ sendreceive 9999
 8: server: server socket: ServerSocket[addr=0.0.0.0/0.0.0.0,port=0,localport=9999]
 9: InetAddress: 0.0.0.0/0.0.0.0
10: LocalPort: 9999
11: server: client socket: Socket[addr=/127.0.0.1,port=34095,localport=9999]
12: InetAddress: /127.0.0.1
13: LocalAddress: /127.0.0.1
14: LocalPort: 9999
15: Port: 34095
16: server: Message 0
17: server: Message 1
18: server: Message 2
19: server: Message 3
20: server: Message 4
21: server: Message 5
22: bash-3.2$ exit
23:
24: Script done on Wed Jun  6 14:58:12 2012
25:
26: :::::::::::::::
27: sendreceive.-9999.log
28: :::::::::::::::
29:
30: Script started on Wed Jun  6 14:58:01 2012
31: bash-3.2$ sendreceive -9999
32: client: server socket: Socket[addr=localhost/127.0.0.1,port=9999,localport=34095
]
33: InetAddress: localhost/127.0.0.1
34: LocalAddress: /127.0.0.1
35: LocalPort: 34095
36: Port: 9999
37: client: Message 0
38: client: Message 1
39: client: Message 2
40: client: Message 3
41: client: Message 4
42: client: Message 5
43: client: Message 6
44: client: Message 7
45: client: Message 8
46: sender: error: Socket[addr=localhost/127.0.0.1,port=9999,localport=34095]
47: bash-3.2$ exit
48:
49: Script done on Wed Jun  6 14:58:15 2012
```