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import java.rmi.RemoteException;

public class BootstrapServer_Monitor {

    int clients = 0;
    int waitingNodes = 0;
    int waitingClients = 0;
    boolean keepalive = false;
    boolean addingNodes = false;
    boolean clientsturn = false;

    synchronized public void start_join_node() {
        while ((clients > 0 || addingNodes) || (waitingClients > 0 && clientsturn) || keepalive) {
            ++waitingNodes;

            try {

                wait();

            } catch (InterruptedException e) {}

            --waitingNodes;
        }

        addingNodes = true;
    }

    synchronized public void end_join_node() {
        addingNodes = false;
        clientsturn = true;
        notifyAll();
    }

    synchronized public void start_client_search() {
        while (addingNodes || (waitingNodes > 0 && !clientsturn) || keepalive) {
            ++waitingClients;

            try {

                wait();

            } catch (InterruptedException e) {}

            ;

            --waitingClients;
        }

        ++clients;
    }

    synchronized public void end_client_search() {
        clients = clients - 1;
        clientsturn = false;

        if (clients == 0)
            notifyAll();
    }

    synchronized public void start_keep_alive() {
        keepalive = true;

        while (addingNodes || clients > 0) {
            try {

                wait();
            }
        }
    }
}

```

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        } catch (InterruptedException e) {}

        ;
    }

    synchronized public void end_keep_alive() {
        keepalive = false;
        notifyAll();
    }

}
```