Project 5

• Build a distributed peer-to-peer network using Java RMI

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Client-Server vs. P2P

Portal Address

• Each node on the network is a Portal

• A portal address is a URL for an RMI entry where the portal can be found with Naming.lookup
  – rmi://cafe.cs.umd.edu:1099/Portal

RemotePortal

```java
public interface RemotePortal extends Remote {
    RemotePeer peerWithMe(String portalAddress,
                            RemotePeer peer,
                            int maxPeers)
        throws RemoteException;

    void somebodyPeerWithMe(String portalAddress)
        throws RemoteException;
}
```

RemotePeer

```java
public interface RemotePeer extends Remote {
    void logoff()
        throws RemoteException;

    void receive(Message msg)
        throws RemoteException;
}
```
public class BroadcastTextMessage extends Message{
    final String msg;

    public void process(LocalPortal portal) {
        System.out.println(msg);
        portal.forward(this);
    }
    ...
}

public class LocalPortal {
    public void forward(Message msg);
    public boolean initiatePeering(String pAddr)
        throws RemoteException;
    public void shutdown();
    public String getAddress();
}