

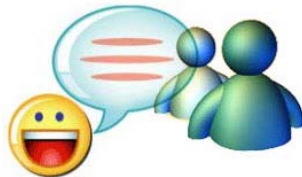


Application Development for Mobile and Ubiquitous Computing

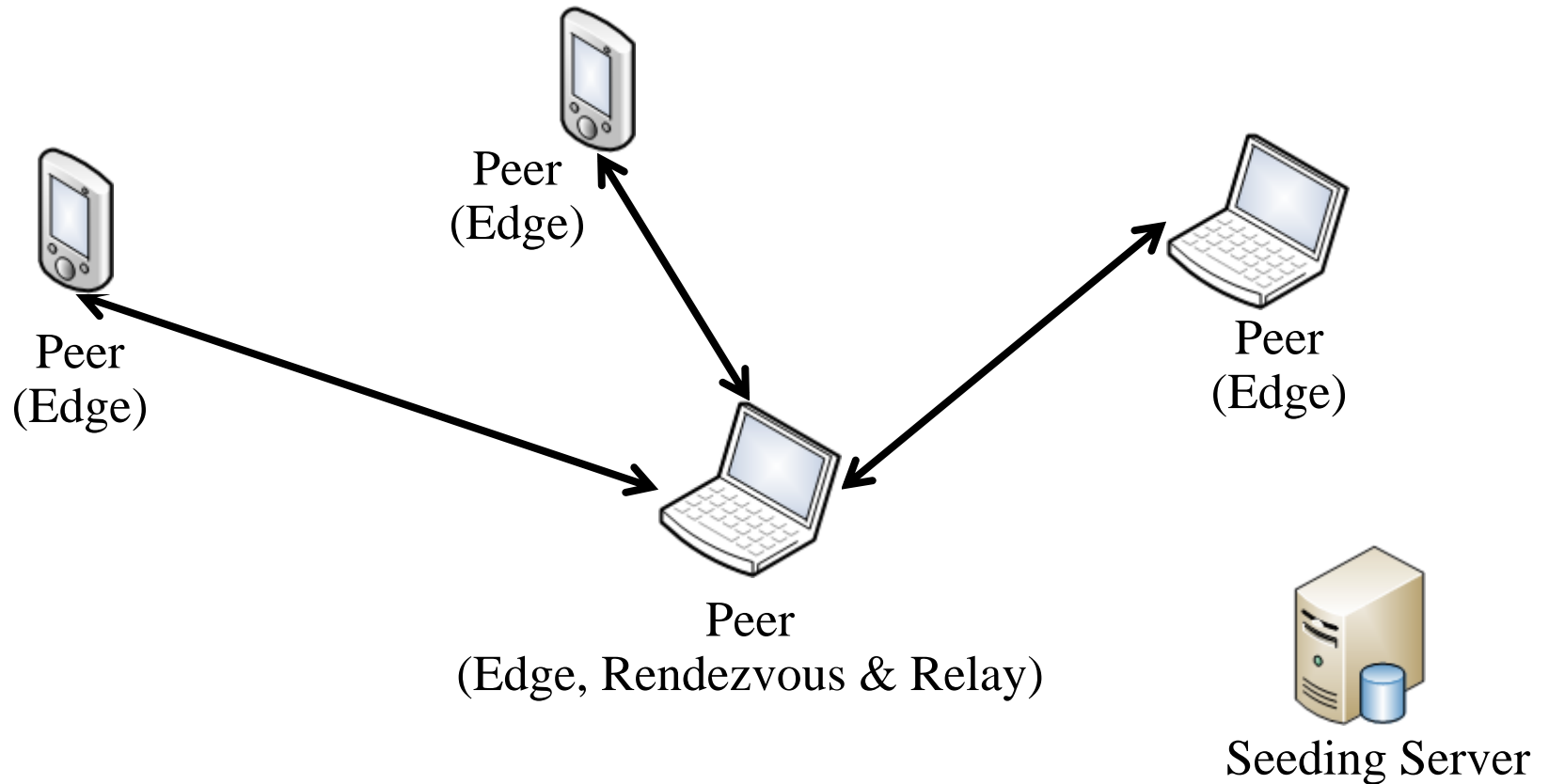
Task 2: JXTA Chat and Content Sharing Final Presentation

Group 4
Mirko Skramusky

- Instant messaging application for mobile phones
- Access to a peer-to-peer network
- Communicate with each other
- Exchange files



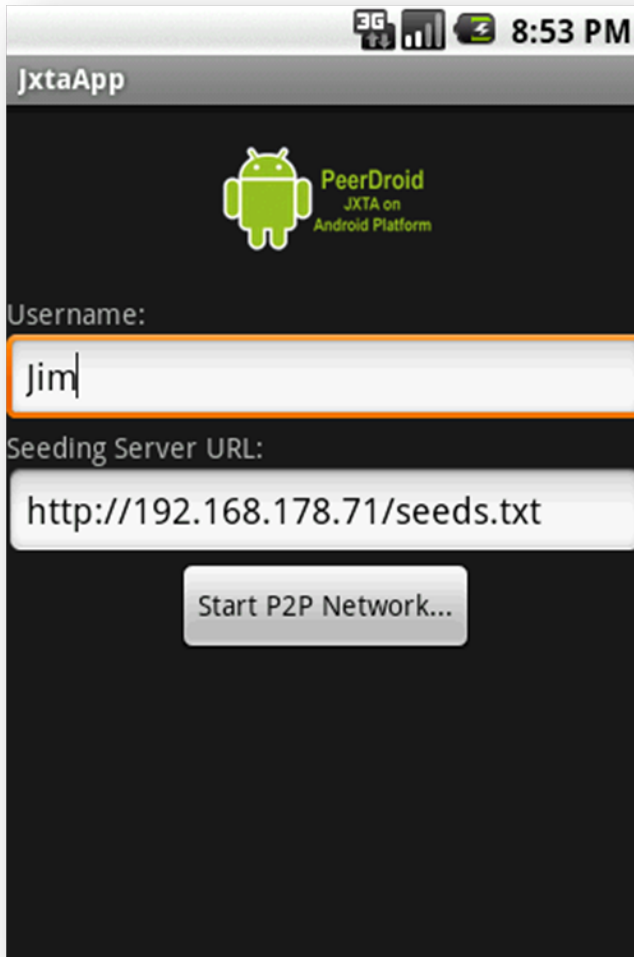
JXTA peer-to-peer Network



Services:

- JXTA
(configuration and management)
- Rendezvous
(connect to a rendezvous peer/the network)
- Discovery
(to find other peer-advertisements and publish own)
- Text & File Transfer

Connect to network



3G 8:53 PM

JxtaApp

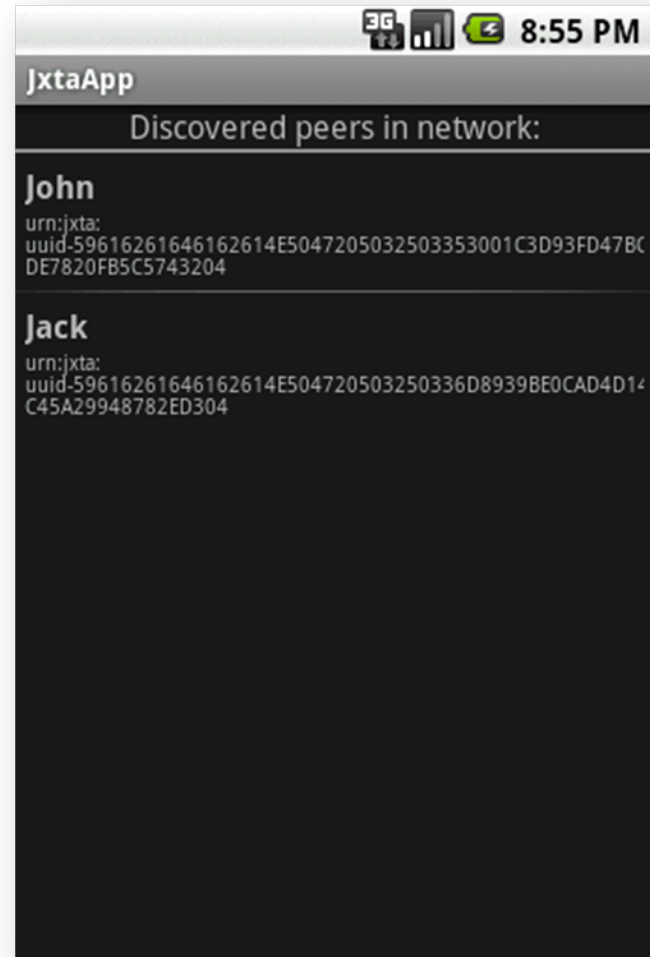
 PeerDroid
JXTA on
Android Platform

Username:
Jim

Seeding Server URL:
http://192.168.178.71/seeds.txt

Start P2P Network...

Discover peers



3G 8:55 PM

JxtaApp

Discovered peers in network:

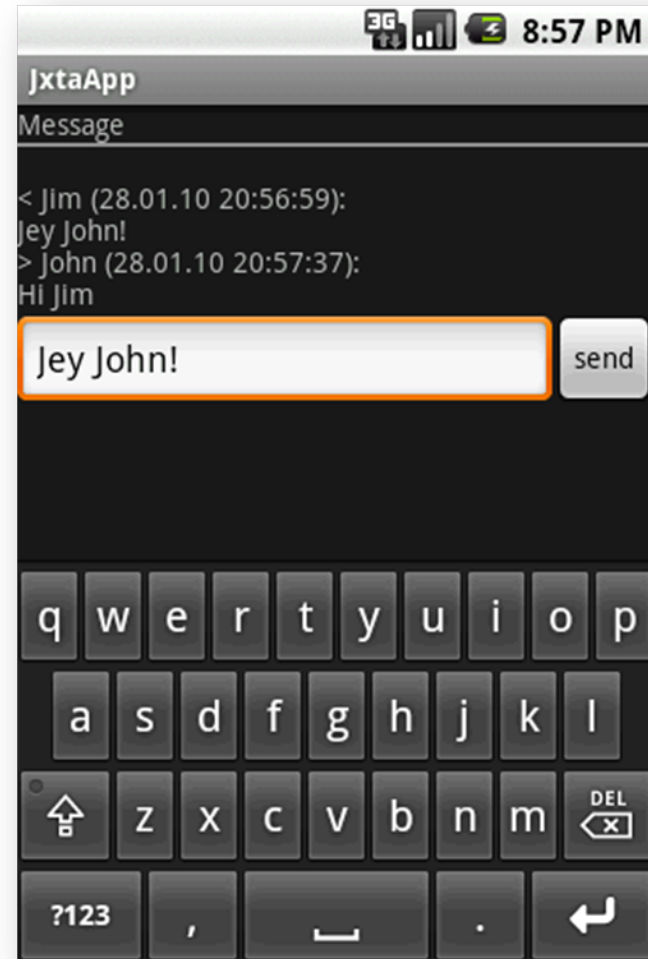
John
urn:jxta:
uuid-59616261646162614E5047205032503353001C3D93FD47BC
DE7820FB5C5743204

Jack
urn:jxta:
uuid-59616261646162614E504720503250336D89398E0CAD4D14
C45A29948782ED304

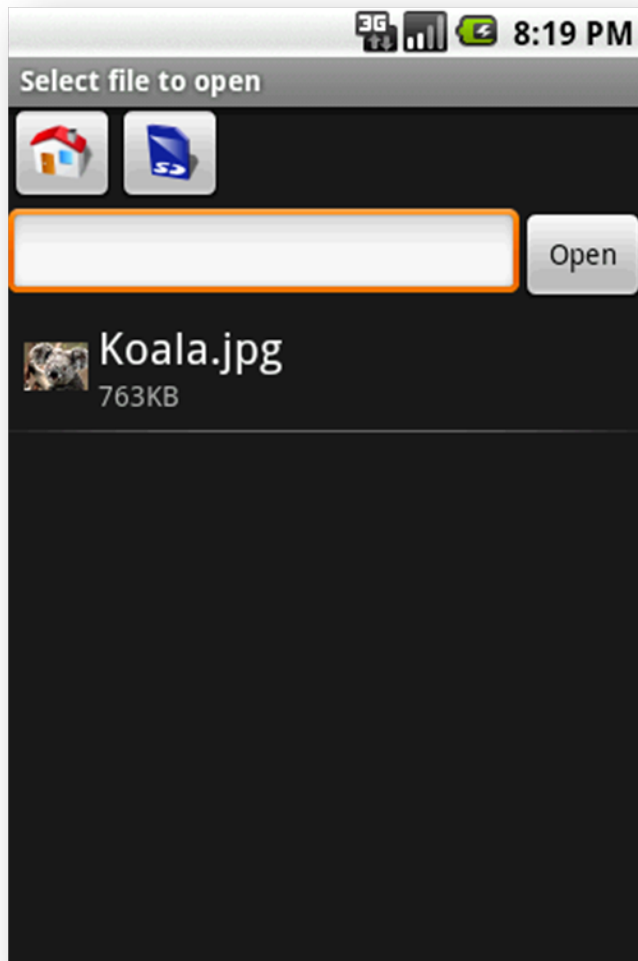
Start interaction



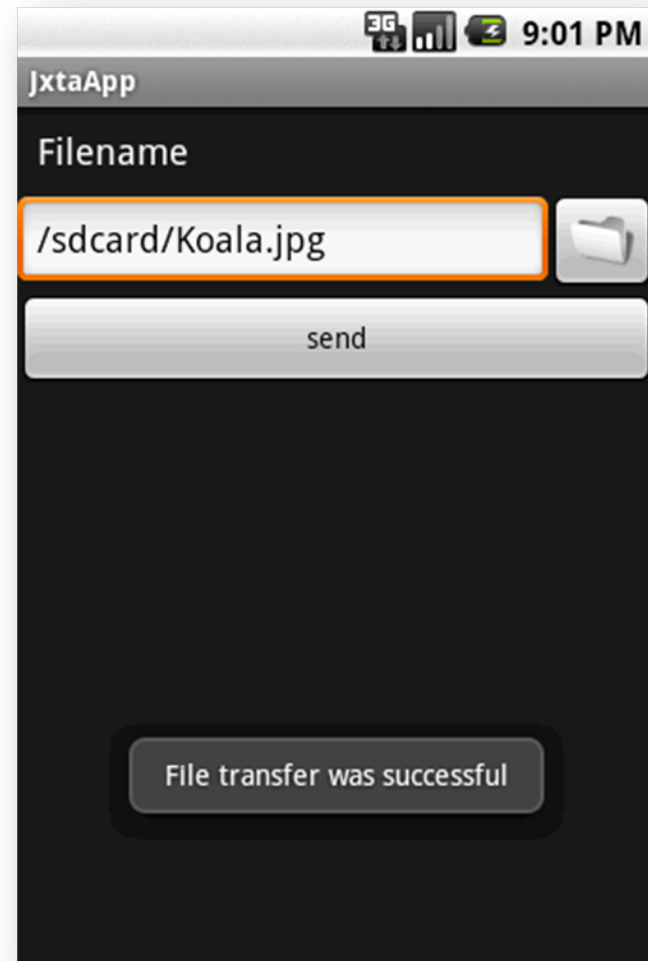
Chatting



File manager



File send



Implementation Details:

- JSE Rendezvous/Relay and Edge Peer
- Android Edge Peer
 - Chat & File Transfer
 - Reuse of connected pipes for multiple messages
 - Save text message history (non-persistent)
 - Third-party file manager
 - Incoming files stored without asking user
- Not Implemented:
 - Group-based communication → not possible
 - Encrypted message and file exchange
 - Start audio conversations

- **Heterogeneity of network technologies and connectivity**
 - Connection to WLAN, UMTS, GPRS, ...
 - Interact with each other even when some of them are behind firewalls

- **Access to distributed network architecture for smart phones**
 - No central server required

- **Usability**
 - ~~Personalization (own buddy list or group list)~~
 - Mobility of users

Android/Emulator:

- Very slow in debug mode
- Integrated virtual router
- Good eclipse integration

JXTA:

- Small community, most information old
- Specification has a lot of communication possibilities

PeerDroid:

- Nearly no community
- No up-to-date source code available
- Some features are not realizable (rendezvous peer, join groups, ...)

▪ Android

- <http://www.android.com/>
- API: <http://developer.android.com/reference/packages.html>

▪ JXTA

- <https://jxta.dev.java.net/>
- JXSE API: <https://jxta-docs.dev.java.net/jxse-javadoc/current/jxse/api/overview-summary.html>

▪ PeerDroid

- <http://code.google.com/p/peerdroid/>

▪ Open Intents File Manager for Android

- <http://www.openintents.org/en/filemanager>