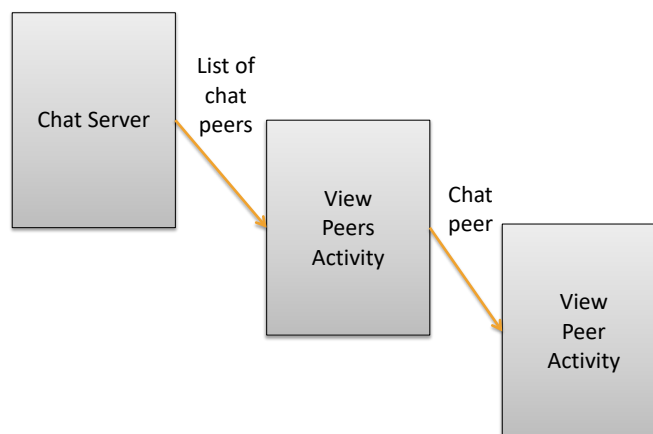


## PARCELS AND PARCELABLE

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### Example: Chat Server App



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## Intent Extras

- Example: Simple Data

```
Intent intent = new Intent();
intent.putExtra("id", id);
intent.putExtra("name", name);
```

- Structured Data

```
public class Peer {
    public long id;
    public String name;
}
Peer peer = new Peer();
Intent.putExtra("peer", peer); // ???
```

- Do not use Serializable in Android apps!

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## Implementing Parcelable

- Structured Data

```
public class Peer implements Parcelable {
    public long id;
    public String name;
    public void writeToParcel(Parcel out, ...) {
        out.writeLong(id);
        out.writeString(name);
    }
    public Peer(Parcel in) {
        id = in.readLong();
        name = in.readString();
    }
    public int describeContents() {
        return 0;
    }
}
```

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## Implementing Parcelable

- Structured Data

```
public class Peer implements Parcelable {
    public long id;
    public String name;

    public static Creator<Peer> CREATOR =
        new Creator<Peer>() {
            public Peer createFromParcel(Parcel in) {
                return new Peer(in);
            }
            public Peer[] newArray(int size) {
                return new Peer[size];
            }
        };
}
```

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```
public class ChatServerActivity extends Activity {

    private ArrayList<Peer> peers;

    public void onOptionItemSelected(...) { ...
        Intent intent =
            new Intent(this, ViewPeersActivity.class);
        intent.putParcelableArrayListExtra
            (ViewPeersActivity.PEER_KEY, peers);
        startActivity(intent); ...
    }
}

public class ViewPeersActivity extends Activity {

    public static final String PEERS_KEY = "peers";
```

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```

public class ChatServer extends Activity {
    ...
    intent.putParcelableArrayListExtra
        (ViewPeersActivity.PEER_KEY, peers);
    ...
}

public class ViewPeersActivity extends Activity {
    public static final PEERS_KEY = "peers";

    public void onCreate(Bundle state) {
        Intent intent = getIntent();
        ArrayList<Peer> peers =
            intent
                .getParcelableArrayListExtra(PEERS_KEY);
        ...
    }
}

```

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## Parcels

- Parcelable == Serializable for Android
  - Do not use Serializable in Android apps!

- Use: Fast IPC

```

public class Bundle {
    public int getInteger(String key);
    public void putInteger(String key, int value);
    public <T extends Parcelable>
        T getParcelable(String key);
    public void
        putParcelable(String key, Parcelable value);
}

```

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## Cross-App IPC

- Send data as a Bundle
- Receiving app may need to set classloader:

```
Message message;  
Bundle data = message.getData();  
data.setClassLoader(Peer.class.getClassLoader());  
Peer peer = data.getParcelable(BOOK_KEY);
```

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