NFC

Android Alliance

Sample Code Warning!

- https://github.com/m00sey
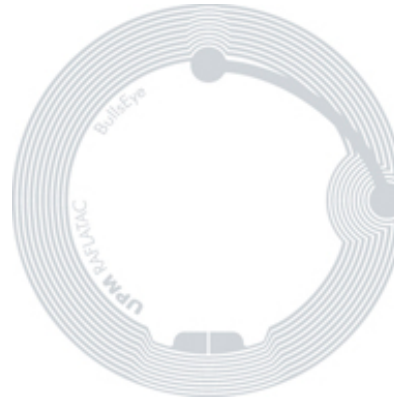
- https://github.com/don

Do Not Put Hands In Gears

Near Field Communications

- Short range

- Instant configuration

- P2P

Tags

PhoneGap NFC Writer

Mime Type:

text/x-vCard

Payload:
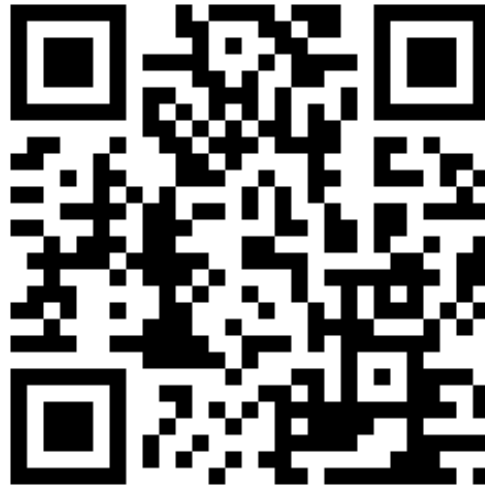
BEGIN:VCARD
VERSION:2.1

There was a problem

Tag capacity is 137 bytes,
message is 198 bytes.

OK

Fill out form and tap a NFC tag to write
data.

Why do we like NFC?

(+NDEF)
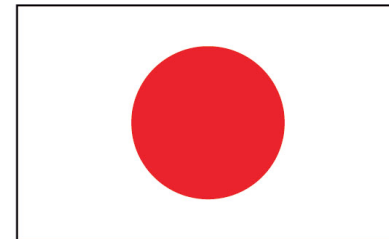
Physical action, virtual reaction

(thanks Google)

Where is NFC?

Android support for NFC

NDEF

NFC Data Exchange Format

I've got a phone and some tags, now what?

Nexus S + Tags + ? = Profit

Theory

Tag Dispatch System

event

NDEF Filter

Tech Filter

Tag

Specific

Generic

Set up

Android Manifest

```
<uses-sdk android:minSdkVersion="10" />

<uses-permission android:name="android.permission.NFC" />
<uses-feature android:name="android.hardware.nfc"
              android:required="true"/>
```

Manifest Filter

```xml
<activity>
    <intent-filter>
        <action android:name="android.nfc.action.TAG_DISCOVERED" />
        <category android:name="android.intent.category.DEFAULT" />
    </intent-filter>
</activity>
```

Select an action

NFC TagInfo

Tags

TagWriter

Running App Filter

```java
IntentFilter[] filters = {
    new IntentFilter(NfcAdapter.ACTION_TAG_DISCOVERED)
};

NfcAdapter nfc = NfcAdapter.getDefaultAdapter(context);
nfc.enableForegroundDispatch(
        activity, pendingIntent, filters, techLists);
```

What's better?

```xml
<!-- start app when scanning a tag with our mime type -->

<activity>
    <intent-filter>
        <action android:name="android.nfc.action.NDEF_DISCOVERED" />
        <data android:mimeType="text/foo" />
        <category android:name="android.intent.category.DEFAULT" />
    </intent-filter>
</activity>
```

```java
IntentFilter[] filters = {
    new IntentFilter(NfcAdapter.ACTION_NDEF_DISCOVERED, "text/foo")
};

NfcAdapter nfc = NfcAdapter.getDefaultAdapter(context);
nfc.enableForegroundDispatch(
        activity, pendingIntent, filters, techLists);
```

Learning to write

Create a message

```
NdefRecord[] records = new NdefRecord[1];

records[0] = new NdefRecord(
    NdefRecord.TNF_MIME_MEDIA, /* tnf */
    "text/foo".getBytes(),     /* type */
    new byte[0],               /* id */
    "Hello World".getBytes()   /* payload */
);

message = new NdefMessage(records);
```

Formatting

```
Tag tag =
intent.getParcelableExtra(NfcAdapter.EXTRA_TAG);

NdefFormatable ndef = NdefFormatable.get(tag);
ndef.connect();
ndef.format(message);
```

Writing

```
Tag tag =
intent.getParcelableExtra(NfcAdapter.EXTRA_TAG);

Ndef ndef = Ndef.get(tag);
ndef.connect();
ndef.writeNdefMessage(message);
```

Demo

Reading

```java
Parcelable[] messages =
intent.getParcelableArrayExtra(NfcAdapter.EXTRA_NDEF_MESSAGES);

NdefMessage message = (NdefMessage)messages[0];
NdefRecord record = message.getRecords()[0];
System.out.println(
    new String(record.getPayload())
);
```

Demo

Peer to Peer

Same Message

```java
NdefRecord[] records = new NdefRecord[1];

records[0] = new NdefRecord(
    NdefRecord.TNF_MIME_MEDIA,  /* tnf */
    "text/foo".getBytes(),      /* type */
    new byte[0],                /* id */
    "Hello World".getBytes()    /* payload */
);

message = new NdefMessage(records);
```

Share a tag

```
NfcAdapter nfc = NfcAdapter.getDefaultAdapter(context);

nfc.enableForegroundNdefPush(activity, message);
```

Demo

Stop Sharing

```
NfcAdapter nfc = NfcAdapter.getDefaultAdapter(context);

nfc.disableForegroundDispatch(activity);
```

Demos

Questions?

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https://github.com/chariotsolutions/phonegap-nfc/