Volley

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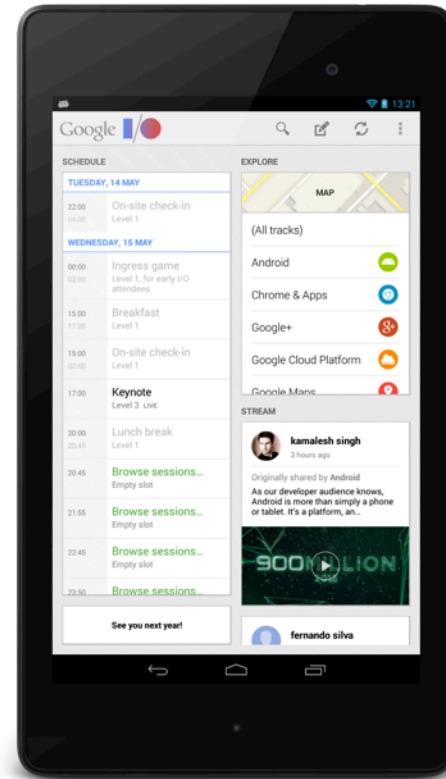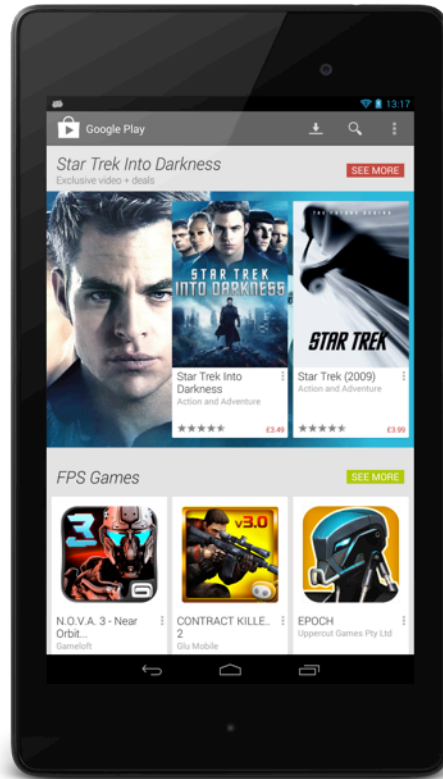Livecode repo: http://goo.gl/KHmzR5
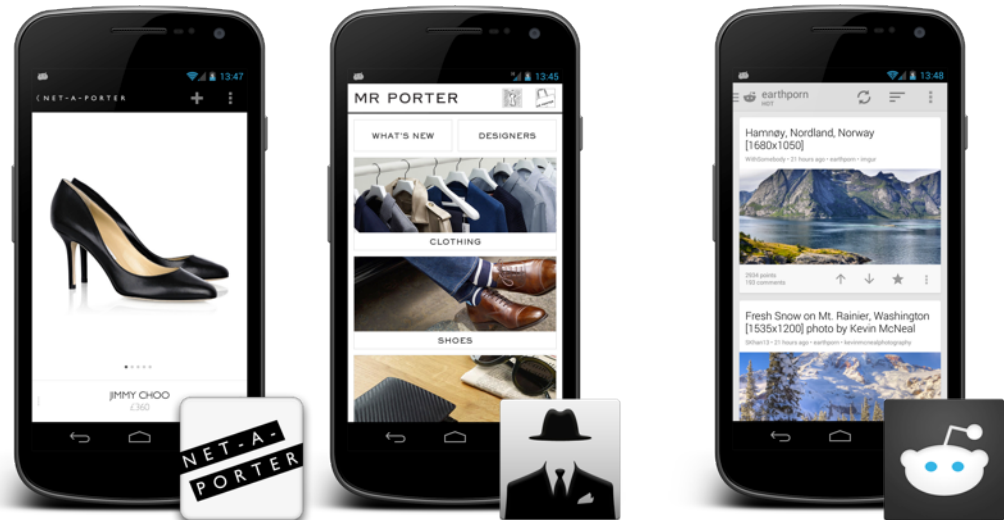
NET-A-PORTER

reddit sync

Overview

- Introduction to Google Volley
- Motivating examples
- An introduction to the reddit API
- Live coding a news reading app
- Questions

What is Volley?

- Introduced at Google I/O 2013*
- A drop in networking library for Android

- Simple request + request queue architecture
- Handles background and UI threading automatically
    - Goodbye AsyncTask!
- Multithreading by default
    - no more .executeOnExecutor()!
- Built in caching

*Ficus Kirkpatrick,Google I/O 2013, Volley: Easy, Fast Networking for Android, http://goo.gl/8rk2jb

Request + Request Queue

- Network requests are encapsulated in Volley requests
- Each request is added to a RequestQueue
- Requests executed asynchronously
- Result of request returned to UI thread
- Set request priorities
- Powerful request management

Still not convinced?

- Android ships with Apache HTTP Client and HttpURLConnection

- These are both supported so why bother?

- Not a one size fits all
    - http://android-developers.blogspot.co.uk/2011/09/androids-http-clients.html

- Volley abstracts the underlying transport layer

- Allows changes to the underlying HTTP library without rewriting all of your networking code

Used by Google

A motivating example

Simple network request

1. Queries reddit

2. Grabs the text returned

3. Creates a JSON Object

4. Parses the JSON

5. Updates the UI

- Lots of extra bulk

- All requests execute in serial (default)

```java
private class GenericParser extends AsyncTask<Void, Void, String[]>{

  @Override
  protected String[] doInBackground(Void... params) {

    String[] titles = null;

    try{
      // Establish a connection
      URL url = new URL("http://www.reddit.com/.json");
      HttpURLConnection connection = (HttpURLConnection) url.openConnection();

      // Grab the json
      BufferedReader reader = new BufferedReader(new InputStreamReader(
        connection.getInputStream(), "UTF-8"));
      String rawJson = reader.readLine();

      // Tidy up after yourself
      reader.close();
      connection.getInputStream().close();
      connection.disconnect();

      // Create the json object
      JSONObject jsonObj = new JSONObject(rawJson);

      // Parse json

    }catch(MalformedURLException e){
      // Catch
    }catch(IOException e){
      // Catch
    }catch(JSONException e){
      // Catch
    }

    return titles;
  }

  @Override
  protected void onPostExecute(String[] result) {
    // Use the results to populate the UI
  }

}
```

Volley request

1. Create request
2. Parse and update UI

```java
new JsonObjectRequest("http://www.reddit.com/.json", null, new
Listener<JSONObject>() {

    @Override
    public void onResponse(JSONObject jsonObj) {
      // parse json and update UI
    }

}, null);
```

Setting up Volley

- No prebuild library available (yet...)

  git clone https://android.googlesource.com/platform/frameworks/volley
  cd volley
  android update project -p .
  ant jar

Evan Charlton: http://goo.gl/XAekHF

Javadocs: http://afzalive.github.io/volley/

Under the hood

For a detailed description of how Volley works see:

Volley: Easy, Fast Networking for Android

YouTube: http://goo.gl/8rk2jb
Slides: http://goo.gl/ZbDe8w

reddit

reddit api

- Most pages available in JSON format by simply appending .json to the URL
  - e.g. http://reddit.com/.json
  - e.g. http://reddit.com/android.json
  - e.g. http://www.reddit.com/comments/1m0mul.json

- Full api available at:
  - http://www.reddit.com/dev/api

Live Code

- Aim is to introduce Volley

- Create a simple reddit app
  - Setup up a Volley Request Queue
  - Create a few simple requests
  - Format and display the results
  - Make the app look good

Questions?