WatchMe: Developer Manual

Latest revision: 2012-10-14

A quick-start guide and overlook of the WatchMe Android application.

Getting started

```
git clone git://github.com/johanbrook/watchme.git
```

Dependencies

- Java 6 SE development environment
- Android SDK
- A (virtual) Android device

Android SDK targets

Minimum SDK:	**16**
Target SDK:	**16**

Building and installing

A `build.xml` is included in the root directory which may be used for building the project, and used by `ant` to run tests, and various other tasks. The default output directory is `bin` in the project root.

To build the project, runt this in a command line prompt:

```
$ ant clean debug
```

To build and install the `WatchMe.apk` package file on a connected Android device, run the following on the command line in the project directory:

```
$ ant clean debug install
```

To uninstall the application from the device:

```
$ ant uninstall
```

That will install the application in debug mode. Other modes are available: `instrument` and `release`. To view all `ant` targets, run

```
$ ant -p
```

Release procedure

This section describes the steps taken before every major release of the WatchMe application.

Requirements

To build an application package in release mode, it needs to be signed with a certificate. Refer to this Android guide on signing applications for release: http://developer.android.com/tools/publishing/app-signing.html. A keystore also needs to be present somewhere in your system, which path should be specified in an `ant.properties` file in the project root.

Building a release package

Use Ant to build an .apk file for release:

```
$ ant clean release
```

You will be prompted for the passphrase of your keystore in this process. The built package will be put in the directory `bin/WatchMe-release.apk`.

Organizing the distribution directory

After having built a release package, it should be organized in the distrbution directory (`dist` in the project root).

1. Create a new directory in `dist` named with the version number. Examples:
    a. `v0.1alpha`
    b. `v0.2`
    c. `v0.4`
    d. `v0.6beta`
    e. `v0.3rc1`
2. Move the `WatchMe.apk` package from the `bin` directory to the newly created release directory
3. Rename the application package to `WatchMe-<release>.apk`. Examples:
    a. `WatchMe-v0.1alpha.apk`
    b. `WatchMe-v0.2.apk`
    c. `WatchMe-v0.6beta.apk`

Release requirements
Every release's directory include the following:

- An application package (see above).
- A release notes document with the following headings (if applicable):
    - New features
    - Changed features
    - Removed features
    - Known bugs (refer to bug ID)
    - Coming features
- A test report document. See existing reports for templates.

Tests

Automatic tests are included in a separate project embedded within the application project, and is called `WatchMeTest`. To run the included tests, head to the command line and use `ant` from the `WatchMeTest` directory:

```
$ ant test
```

Make sure to test the newest application package by running `ant clean debug install` before running any tests.

Architecture

The application code resides in packages organized by area, such as `database` (for data provider interactions), `net` (for HTTP and IMDb connections), `activity` (for Android Activities), etc. Various helpers are in the `utils` package.

The domain model consists of two classes: `Movie` and `Tag`.

Content Provider

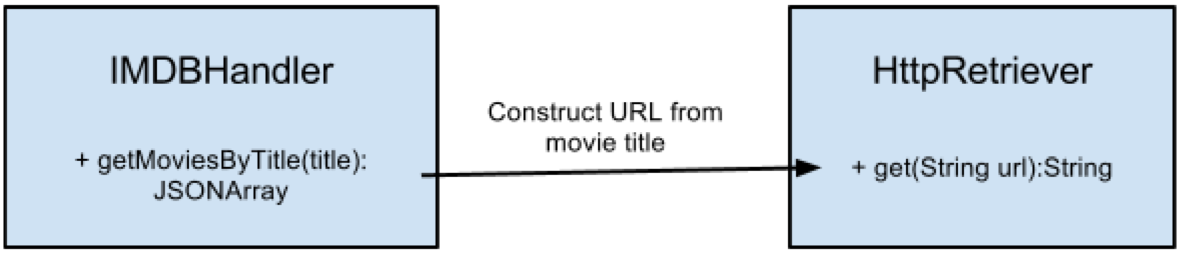
Package
`database`

The data source is backed by an SQLite database which a Content Provider is using to interface with the application code.

HTTP and the IMDb API connection

DAT255
Package
`net`
API endpoint:
http://api.themoviedb.org/2.1/
Response format:
JSON

The API calls to the IMDb API is handled by a middle layer class called `HttpRetriever` which basically performs an HTTP `GET` request for an arbitrary URL (using the Apache HTTP library). The top layer is the `IMDBHandler` class which uses a `HttpRetriever` to make calls to the IMDb API service.


IMDBHandler
+ getMoviesByTitle(title): JSONArray
Construct URL from movie title
HttpRetriever
+ get(String url):String

Notifications and Services

Package
`notifications`

The movie notification feature is handled by a system of alarm tasks, clients and Android Services. The main task for the system is to schedule Android notifications on a certain date (e.g. a movie's release date, set by the user).

To use notifications with the Movie model, create an instance of the `NotificationClient` class, connect to the underlying notification service with `connectToService()`, and use `setMovieNotification(Movie movie)` to set a notification for a movie object.