Mobile iPlayer App Exercise

Overview

The purpose of this exercise is to get a basic understanding of some of the services used by the Mobile iPlayer application and how to use them to build a mobile UI.

To do this we will build a "***Mini iPlayer***" on the platform of your choice (Android/iOS), which uses real iPlayer back-end services to implement a subset of iPlayer features.

Core Features

1. Screen to display a list of *Programme Categories*: Arts, Documentaries, Sports, etc
2. Selecting a Category to show a list of *Programme Highlights* for that Category.
3. Programme Images displayed alongside Episodes in the list.
4. Selecting an Episode to show the full details for that Episode.
5. Programme Image displayed with the Episode Details.

Nomenclature

Episode An *Episode* is an individual instance of a *Programme.* This may be a single episode of EastEnders, a movie, or an episode of a series such as Top Gear.

Programme A *Programme* represents a *Series* or *Brand* which may have multiple *Episodes* associated with it. For example, Top Gear could be represented as Programme, as it is a Brand with multiple Series.

Highlights *Highlights* are an editorially curated list of *Episodes* and *Collections*.

Collection A *Collection* is an editorially curated group of *Episodes.* This may be a group of Episodes on a particular theme, such as "Jazz Music". A Collection may appear in a *Highlights* feed, as well as other feeds that the application uses.

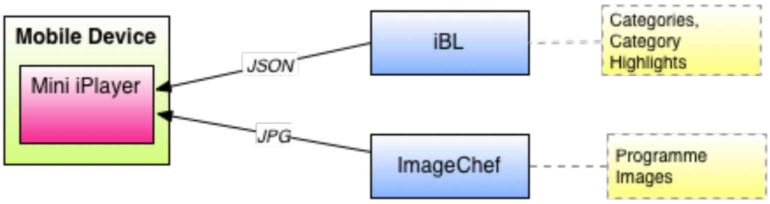
iBL iPlayer Business Layer – a BBC web service that provides metadata to iPlayer client applications.

ImageChef A web service that provides *Programme Images.*

Endpoint A URL at which a service dependency can be located.

JSON Javascript Object Notation – a data encoding format.

Architecture



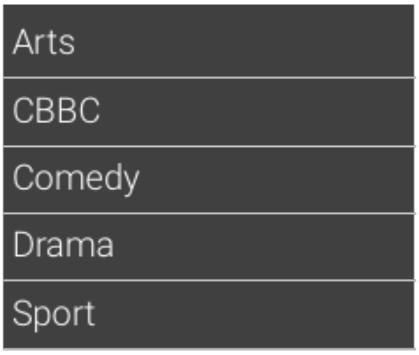
Approach

We'd like you to build the ***Mini iPlayer*** in an *iterative* way. That is, that the exercise should be broken up into tasks that allow each feature to be built from a working skeleton, with each subsequent step building upon working software to *enhance* the feature. When a feature is complete, then the next feature should be built upon it.

To achieve this, build each of the "Core Features" in the order defined above, with each step being an enhancement of the last.

Category List Feature

UX



Arts
CBBC
Comedy
Drama
Sport

Data Feed

The Category list is provided by IBL. The endpoint is:

http://ibl.api.bbci.co.uk/ibl/v1/categories?rights=mobile

Development Tips

Android

Look into using the *OkHttp* library for networking:
http://square.github.io/okhttp/

Look into using the GSON library for parsing model objects from the JSON Response:

https://code.google.com/p/google-gson/

For the list UI component, look into using *RecyclerView*. This is the up-to-date list view component on Android. You could alternatively use the legacy, simpler, *ListView* Android UI component (some of our legacy views in iPlayer still use this).

iOS

Look into using URLSession session.

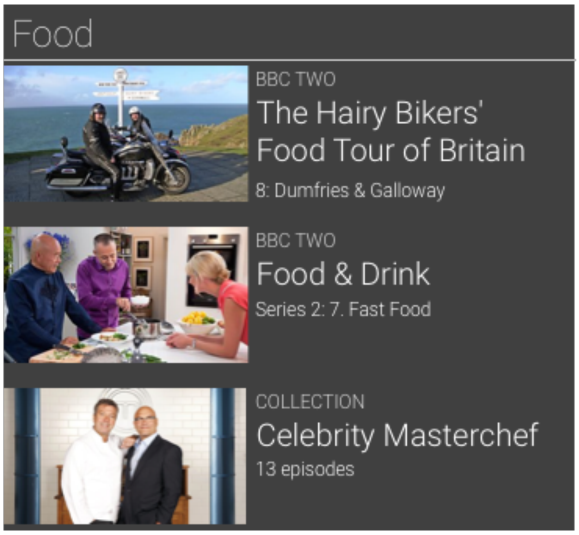
https://developer.apple.com/documentation/foundation/urlsession

Look into using the *CollectionView UI component* for the lists. This is what we use in iPlayer.

NOTE: You may use other libraries, or the platform framework APIs, if you wish — you do not ***have*** *to use these tips and suggestions.*

Category Highlights Feature

UX



Food

BBC TWO

The Hairy Bikers' Food Tour of Britain

8: Dumfries & Galloway

BBC TWO

Food & Drink

Series 2: 7. Fast Food

COLLECTION

Celebrity Masterchef

13 episodes

The Category Highlights should be presented with:

- Category Title at the top of the screen
- A list of elements from the Category Highlights feed that contains Episodes and Collections
- Episode cells will have the following information:
  - Channel ("masterbrand")
  - Title
  - Subtitle
- Collections cells will have the following information:
  - "COLLECTION" in place of the Channel masterbrand
  - The Collection title
  - The number of episodes in the Collection
- Episode and Collection cells will have a Programme Image

Data Feed

http://ibl.api.bbci.co.uk/ibl/v1/categories/{category}/highlights?lang=en&rights=mobile&availability=available

Where {category} is the selected Category to load.

For example:
http://ibl.api.bbci.co.uk/ibl/v1/categories/documentaries/highlights?lang=en&rights=mobile&availability=available

Programme Images

Programme Images are retrieved from a service called ImageChef. The URLs for images appear in the feeds in the format:

http://ichef.bbci.co.uk/images/ic/{recipe}/p022wsb5.jpg

Where {recipe} is the size of image to request in the format: {width}x{height}

The size must have an aspect ratio of 16:9. The dimensions must be multiples of 16 and 9 respectively.

For example:

http://ichef.bbci.co.uk/images/ic/640x360/p022wsb5.jpg

http://ichef.bbci.co.uk/images/ic/320x180/p022wsb5.jpg

Development Tips

General

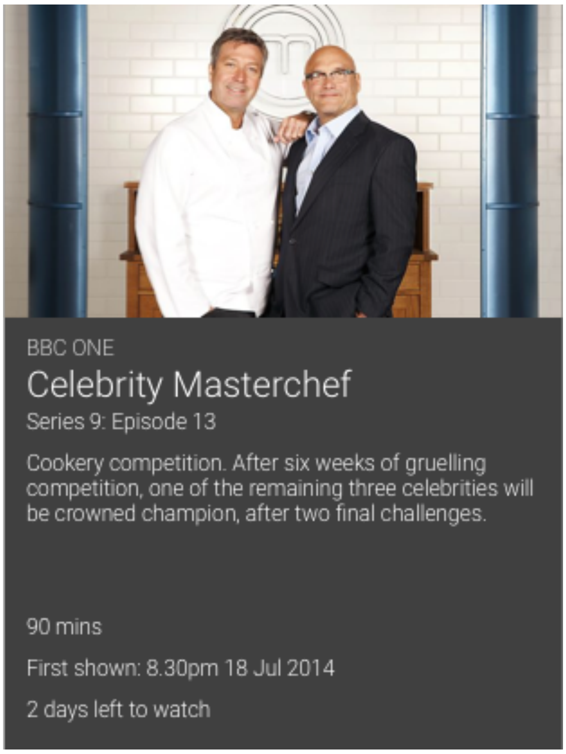
- Get a basic list working first with just the text items from the feed.
- Collections will appear in the highlights feed as a JSON element with a type of `group_large`. Ignore these at first, don't parse them out or display them in the list. Get the list working with the elements of type `episode`.
- Once you are happy with loading the Episodes, introduce the parsing and display of Collections.
- Finally, once you are happy with the loading, parsing, and display of the list, implement the loading of programme images.

Android

Look into using Volley's ImageLoader.

Episode Details Feature

UX



BBC ONE

Celebrity Masterchef

Series 9: Episode 13

Cookery competition. After six weeks of gruelling competition, one of the remaining three celebrities will be crowned champion, after two final challenges.

90 mins

First shown: 8.30pm 18 Jul 2014

2 days left to watch

The Episode Details shall display:

- Channel masterbrand
- Episode title
- Episode subtitle
- Episode synopsis
- Episode duration
- Date the episode was first broadcast
- How long there is left to watch the programme
- The Programme Image

The Episode Details shall be displayed when a user selects an *Episode* from the Category Highlights list. (Selecting a *Collection* should have no action).

Data Feed

For the purpose of this screen, you should re-use the data from the Episode element in the Highlights feed.

Development Tips

General

How you display the Episode Details is up to you. It could be a new screen, or a modal overlay.

Again, try to follow the iterative approach. Start with something basic, which displays the textual information. Once that is in place, enhance the feature with Programme Image loading.

Android

If you are implementing Episode Details in a new Activity, consider using the Parcelable interface to package your Episode model object before passing it to the new Activity via an Intent.