

Android material design: its impact on location-based apps

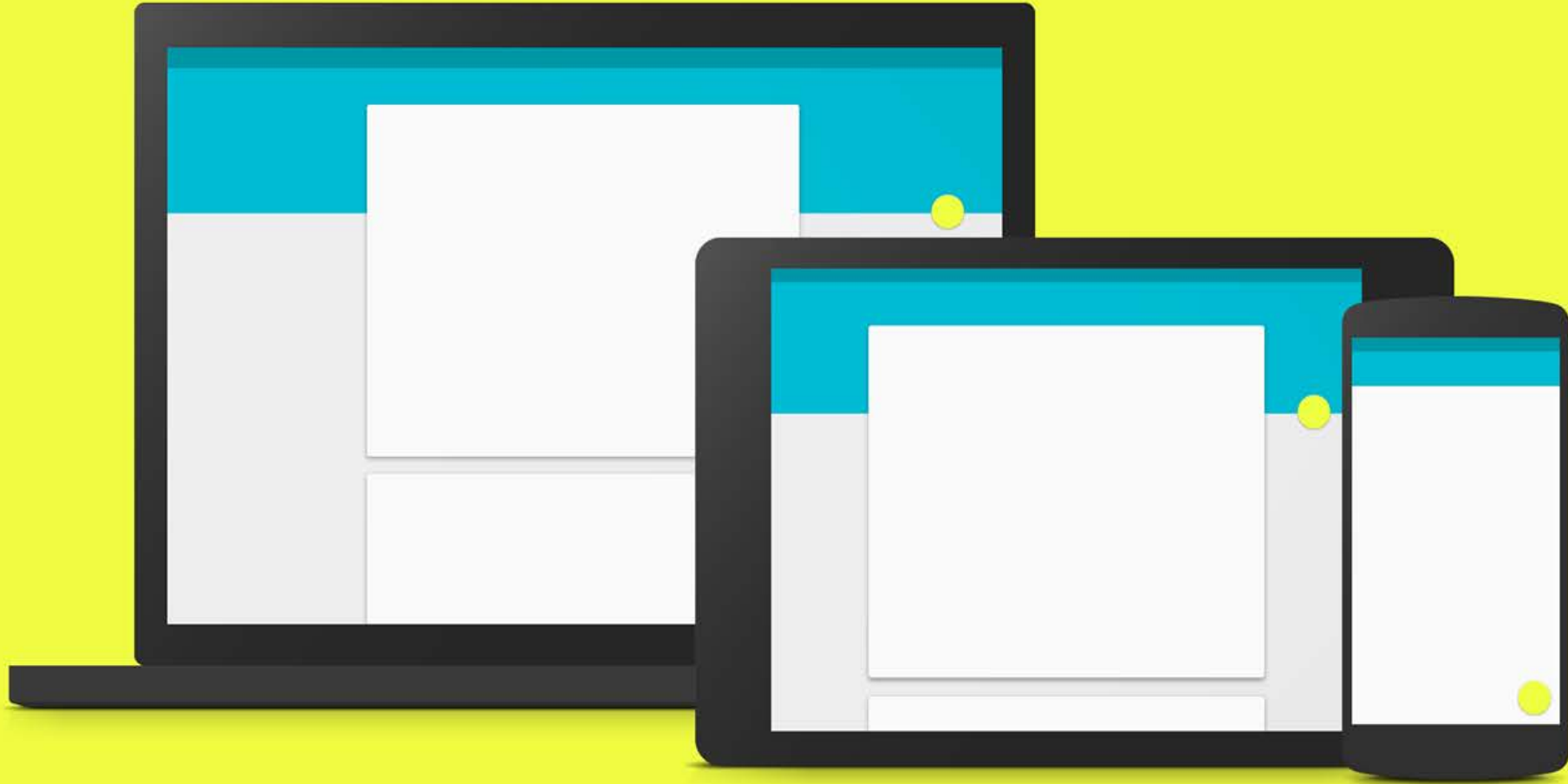
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WELCOME

What is material design?



Google's answer to Apple's design dominance...

“...a visual language for our users that synthesizes the classic principles of good design with the innovation and possibility of technology and science.”

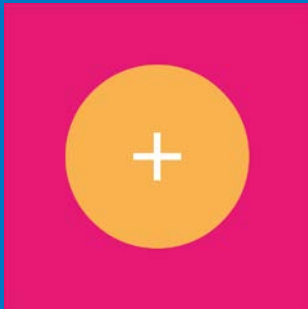
Unified experience across platforms, device sizes and human computer interaction (touch, voice, mouse & keyboard)

Creating a Google brand AND an Android brand

Principles



Material is the metaphor – modern tech inspired by paper and ink
(not skeuomorphic – does not replicate)



Bold, graphic, intentional – print based design guides visual treatment



Motion provides meaning – user actions initiate movement

Lets see some then....

Structure

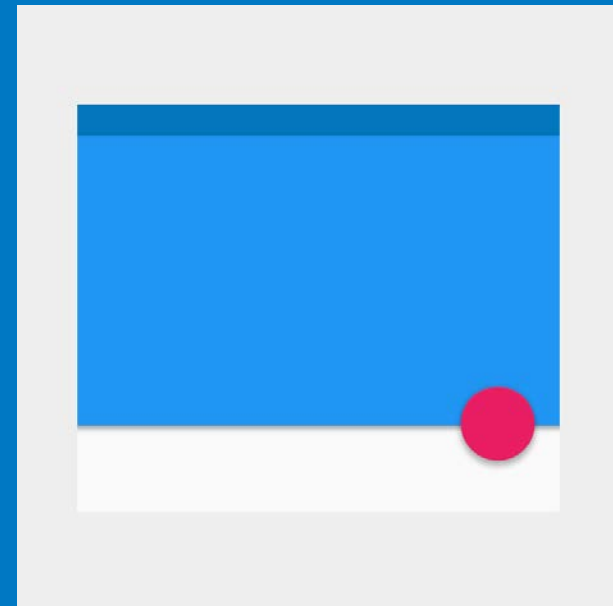
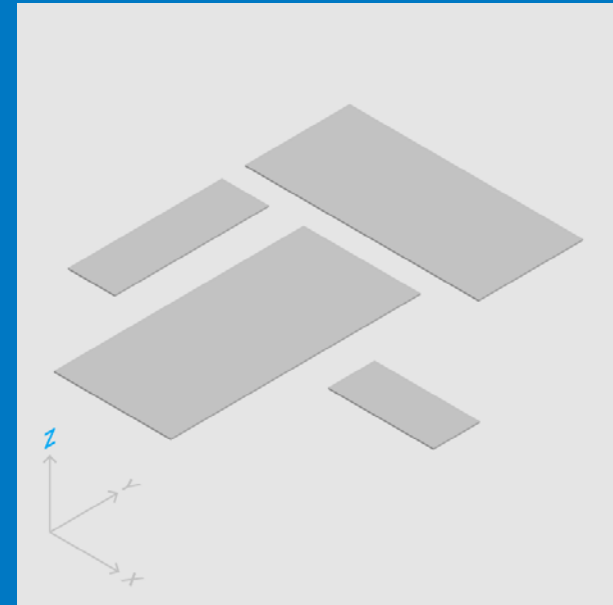
3d layering of content

Elevation of elements important – conveyed by shadows

Movement of surfaces under each other

Grouping of objects, siblings should move the same

Floating action buttons



Layout and color

Sizing of components (toolbars = 56dp / 64dp)

Never split sheets with another sheet!

Grids and templates – take care of your dp!!!

Cards for related data (not homogenous content)

Fixed width, variable height

Color & Themes - material theme

3 from primary, one from accent palette

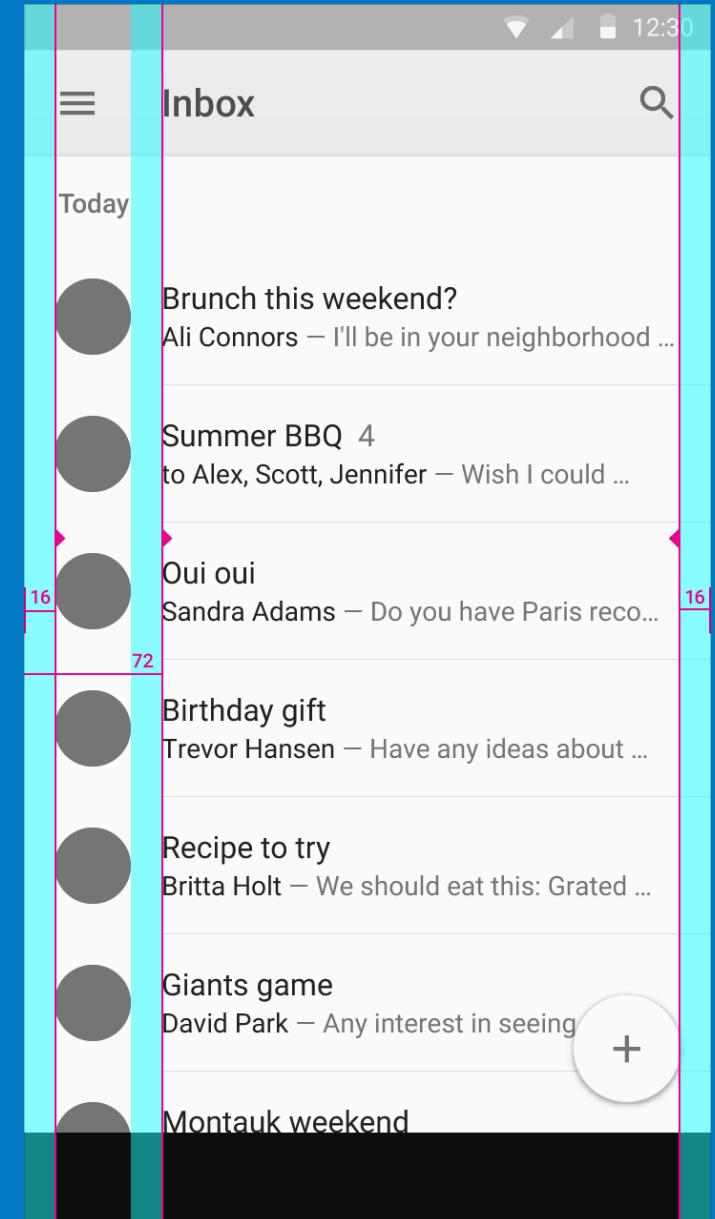
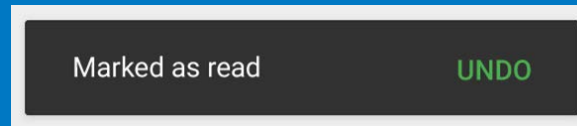
Chips, Snackbars and Toasts, *Tasty...*

Imagery - don't use stock images

Use Hero images!

Maximise your content, take up the screen real estate

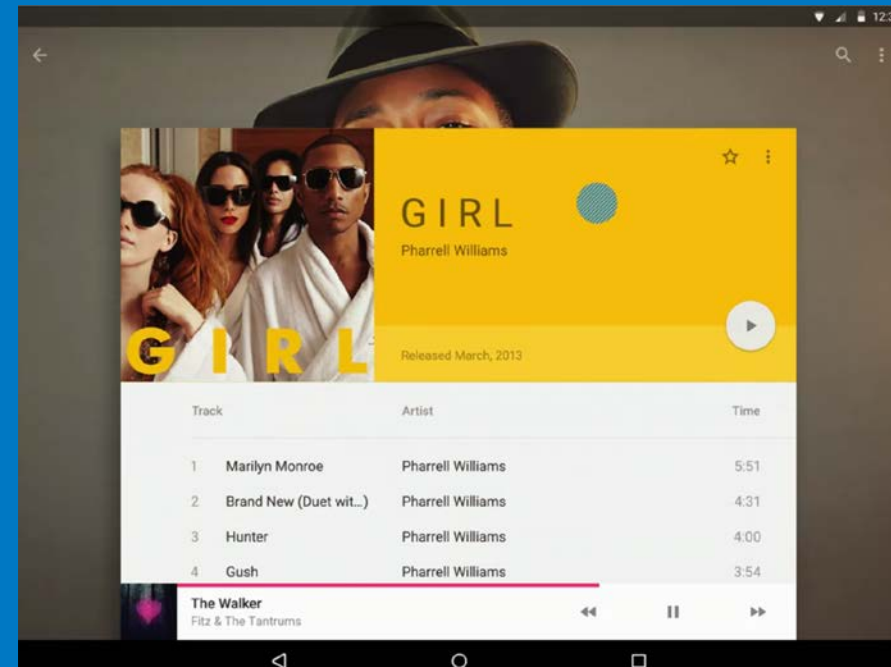
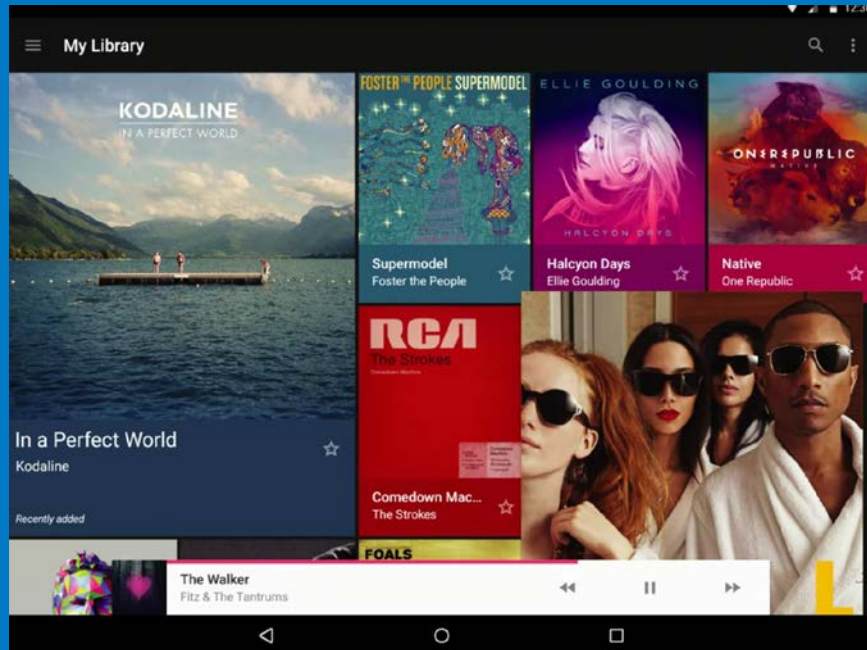
<http://www.google.com/design/spec/style/imagery.html#imagery-best-practices>



Meaningful transitions

Content grows/shrinks from its source to destination

Help organize the information architecture of the app



Interaction feedback

Highlight/selection of paper

Effects

- Surface reaction – touch ripple

- Material response – lift up when touched

Helps guide user in what to do next

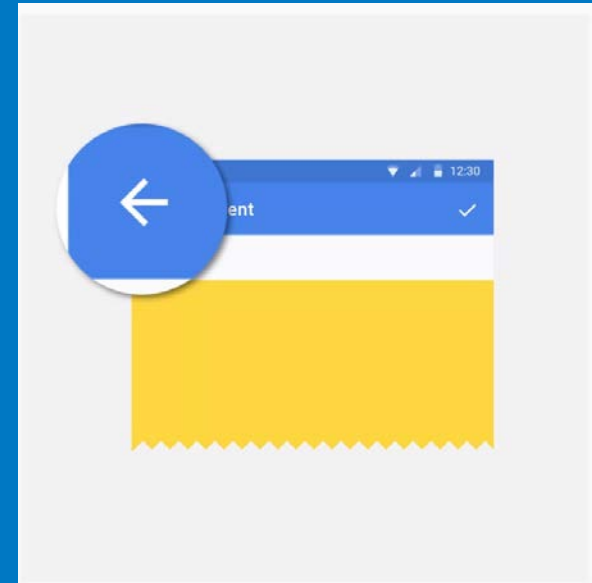
Animations

Authentic motion and consistent choreography

<http://www.google.com/design/spec/animation/authentic-motion.html#authentic-motion-mass-weight>

Delightful details

<http://www.google.com/design/spec/animation/delightful-details.html>



Iconography

Simple, flat, consistent

Longest page in the spec, so beware....



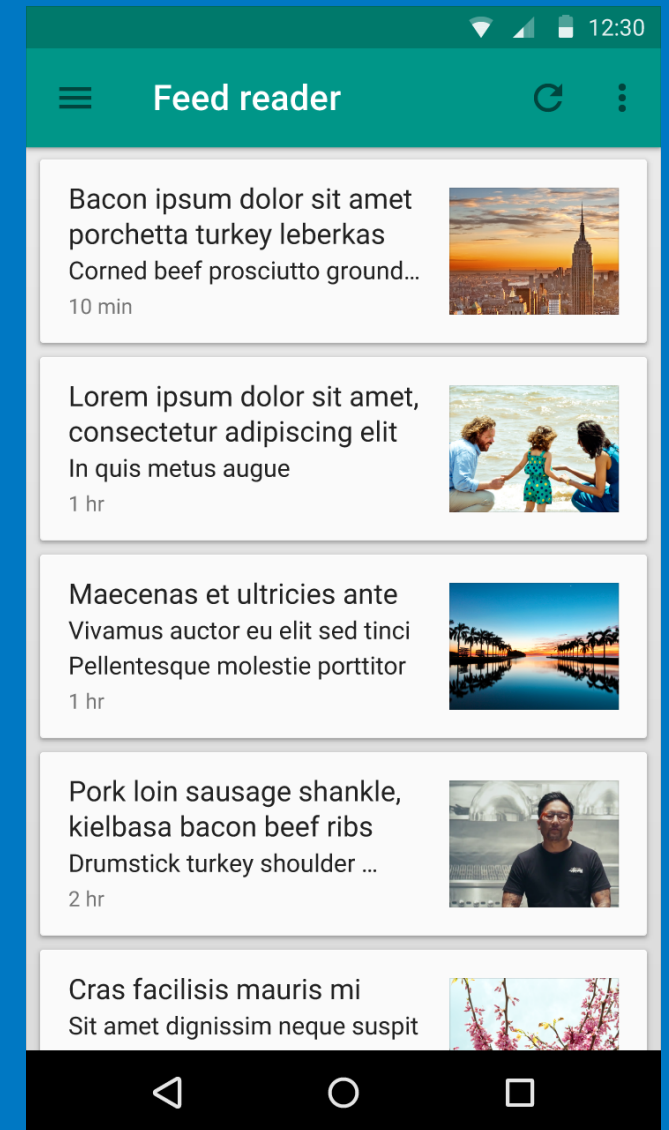
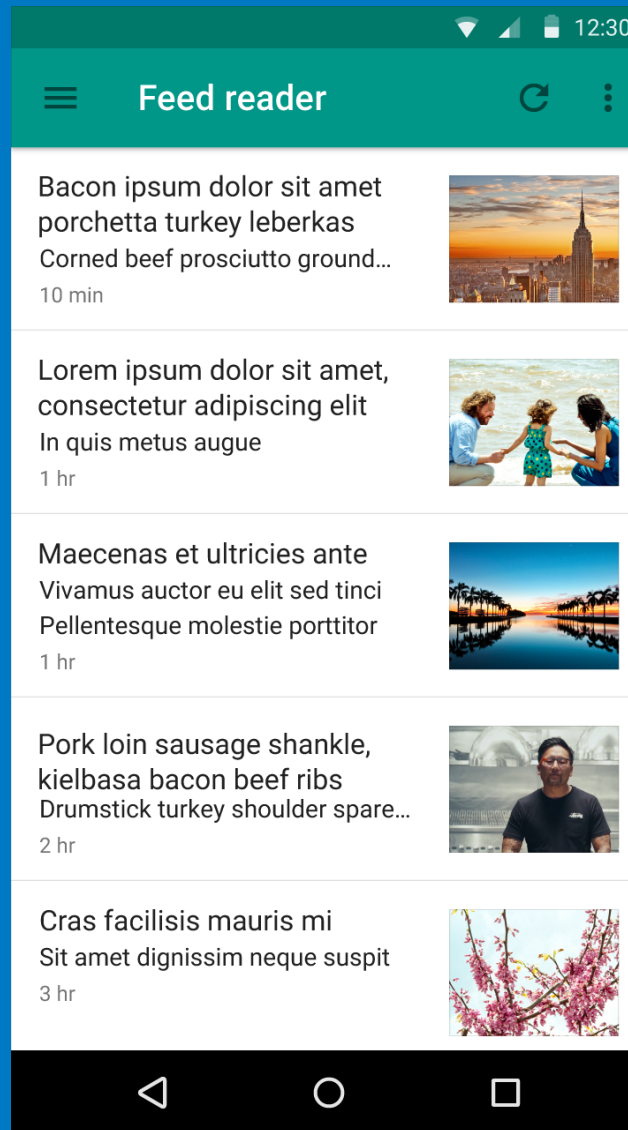
More principals...

<http://www.google.com/design/spec/material-design/introduction.html>

It's a lesson on how to write design guidelines...

<https://medium.com/@orhnsnmz/how-to-upgrade-your-apps-design-from-holo-to-material-design-a-case-study-f77e33a528c8>

Clarifying some unclear areas in the guidelines



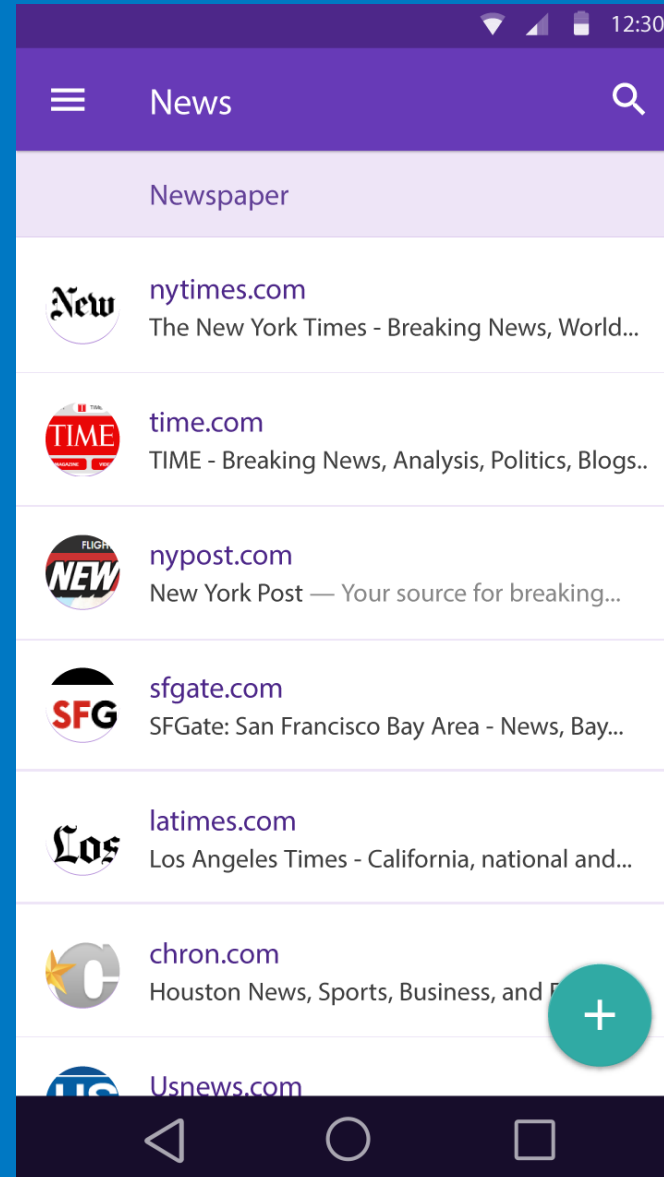
Lists

Good for items with a few lines of text

Fewer actions

Similar types of information

Better for scanning text



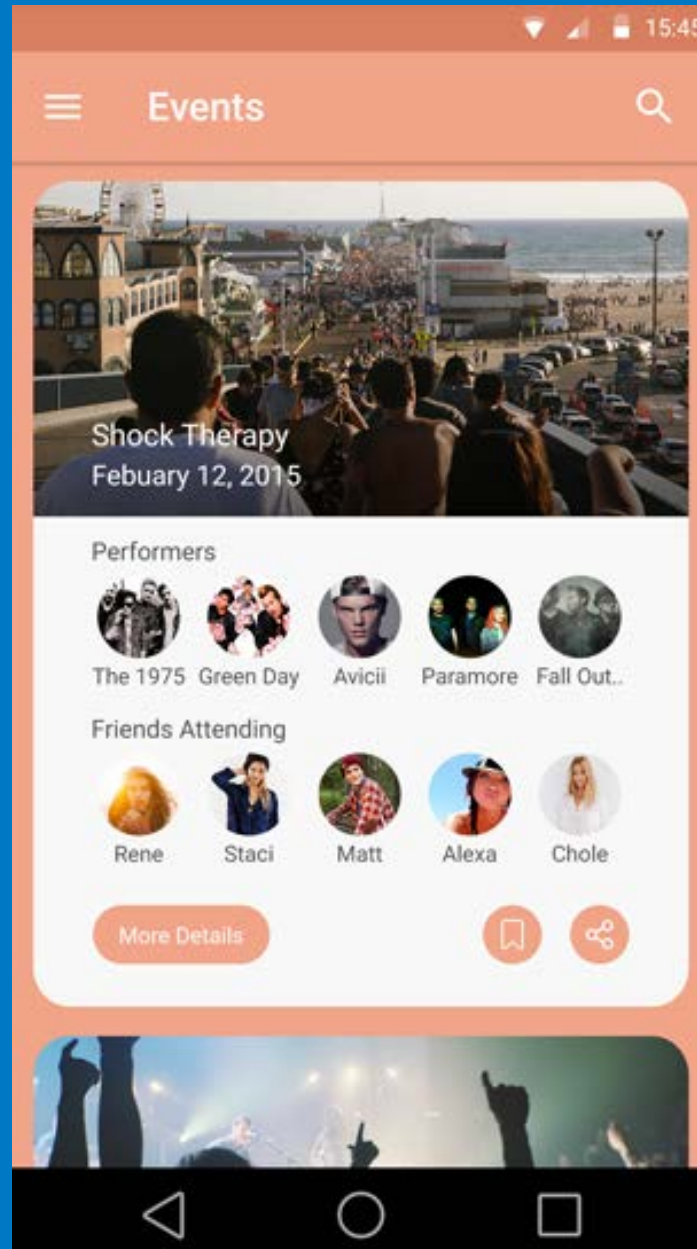
Cards

Mixed content

Multiple actions

Different lengths of content

Strong or dominant imagery



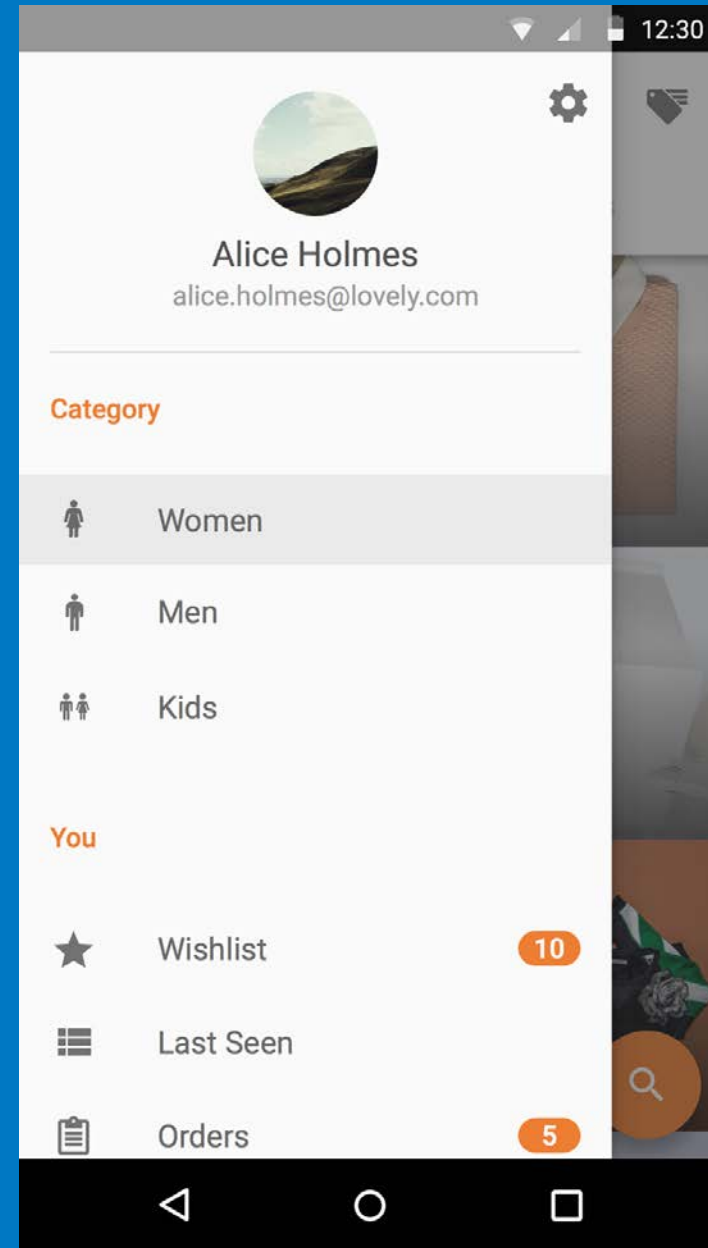
Color

Bright colors work well in moderation.

Bright colors work well in muted environments.

Bright colors work great when they are the focal point.

Design can be fairly uneventful and yet still interesting.

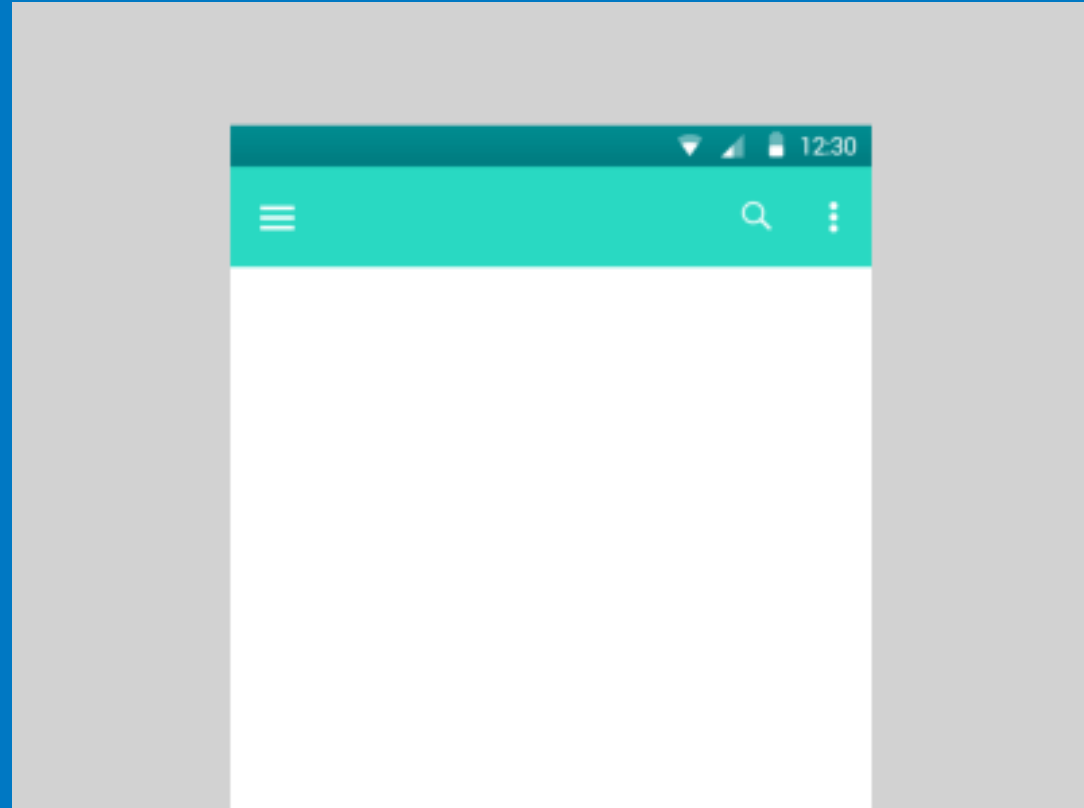


Animation

When is animation too much?

Is it distracting? Is it jarring?

Is it overkill?

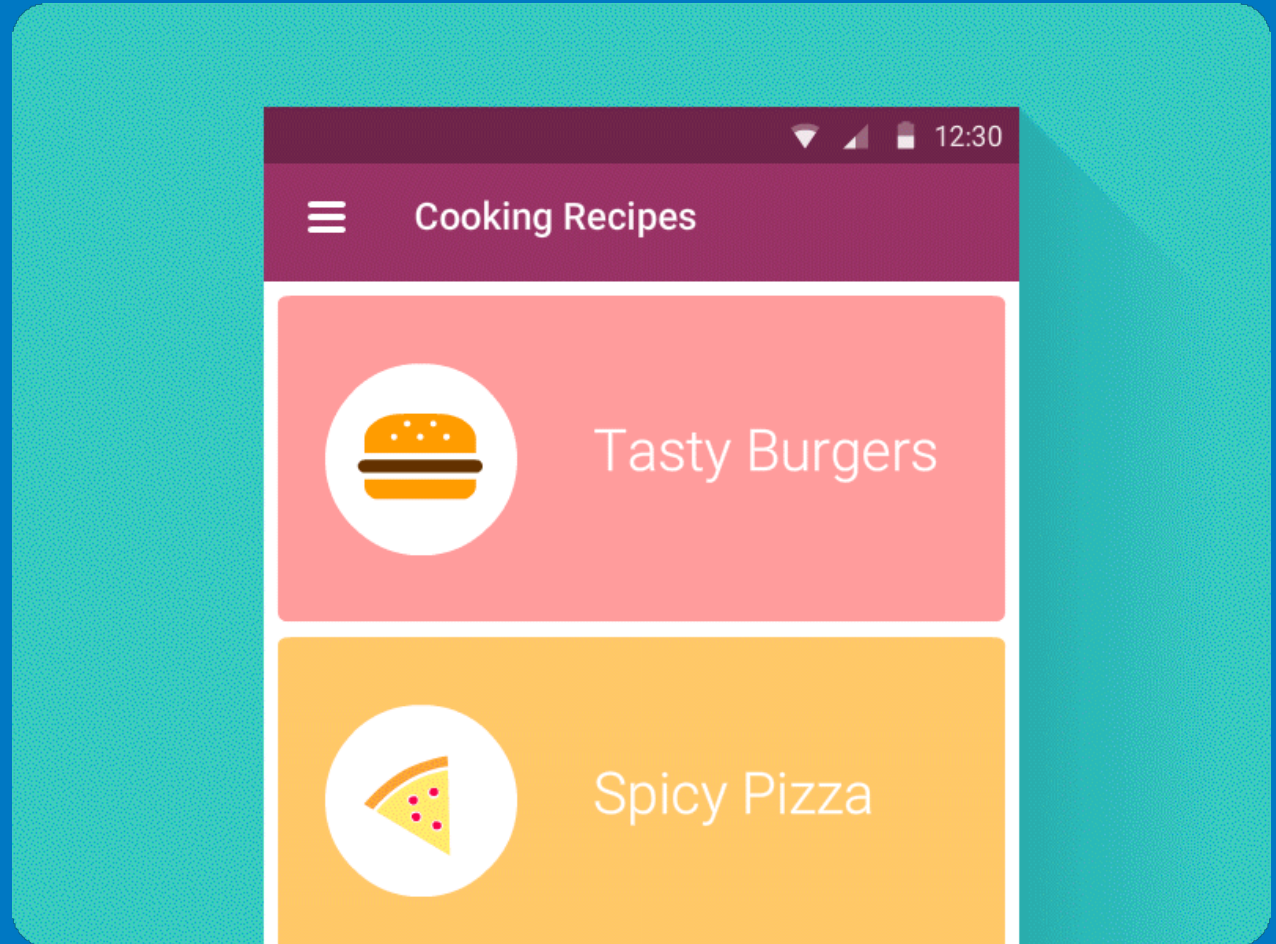




Hold on!

Give us a minute, we're looking
for products

Take reasonable
opportunities
to do something
interesting.



Rule of thumb: Enhancing the users experience

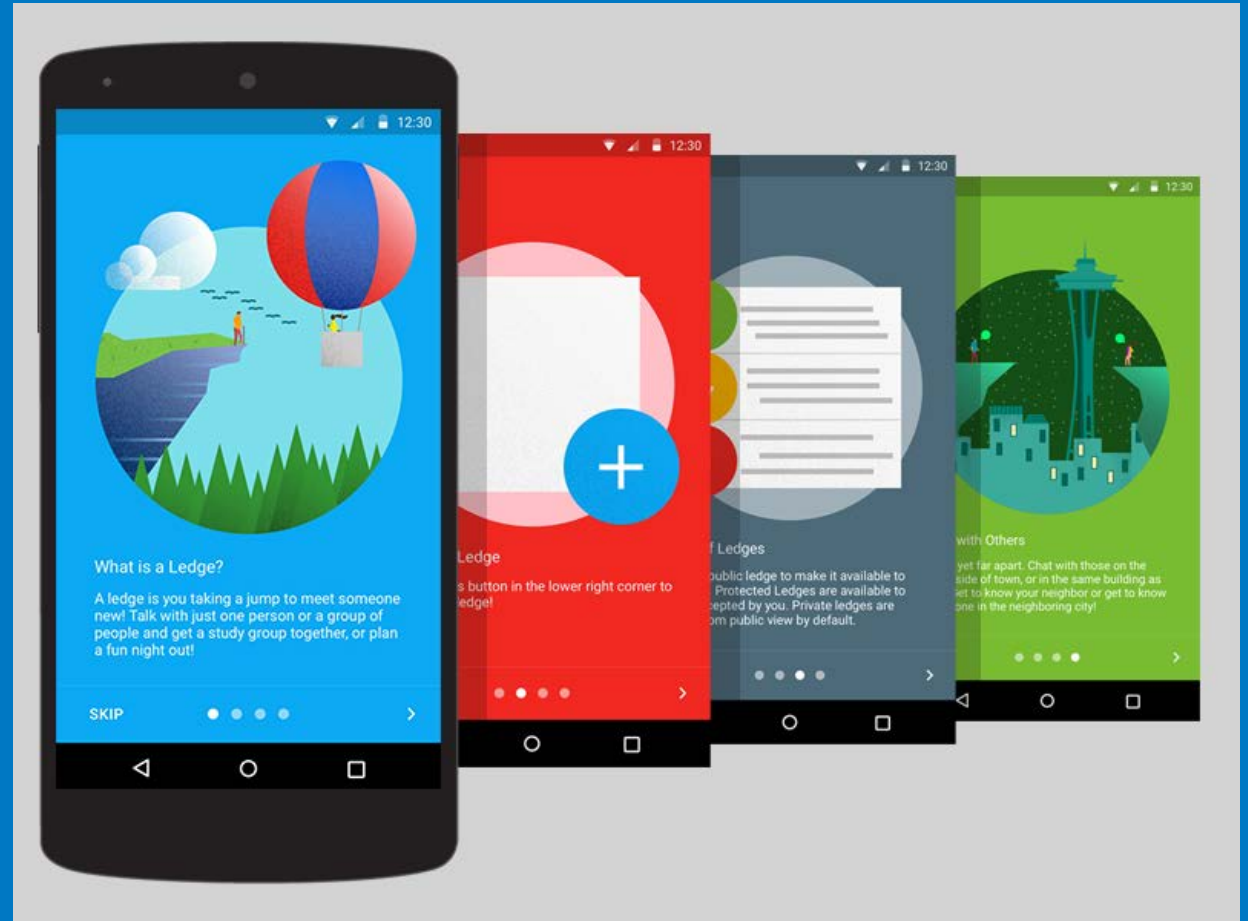
Places where you can expect enhanced design:

Start screen

Navigation Drawer

Loading Indicators

About screen



What are some changes coming to Esri mobile apps?

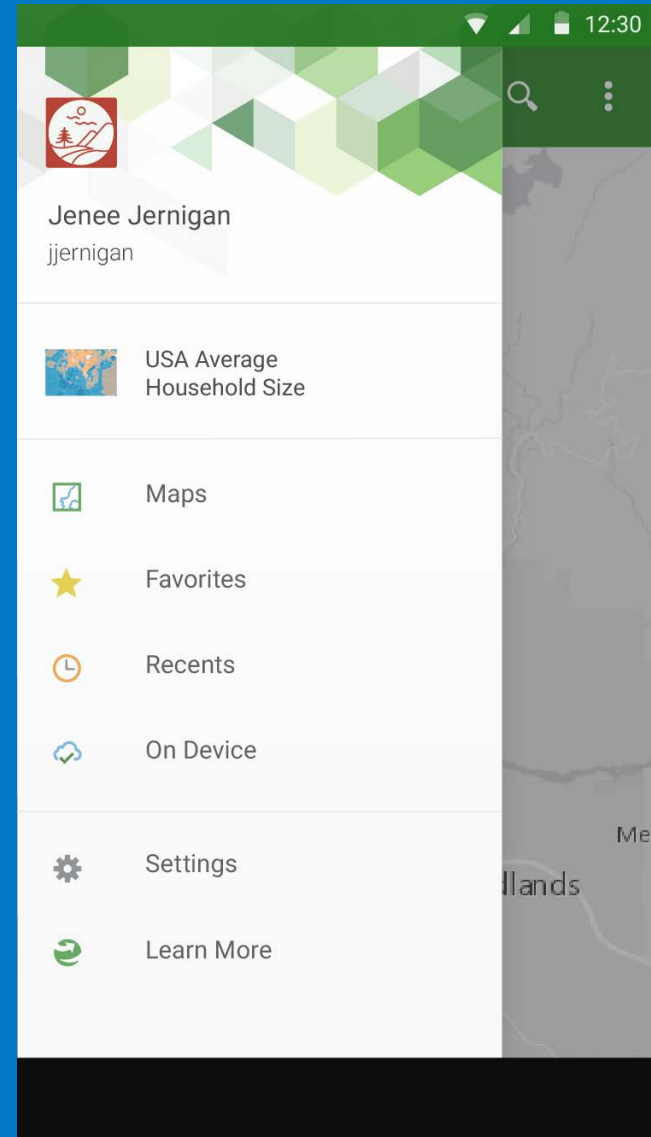
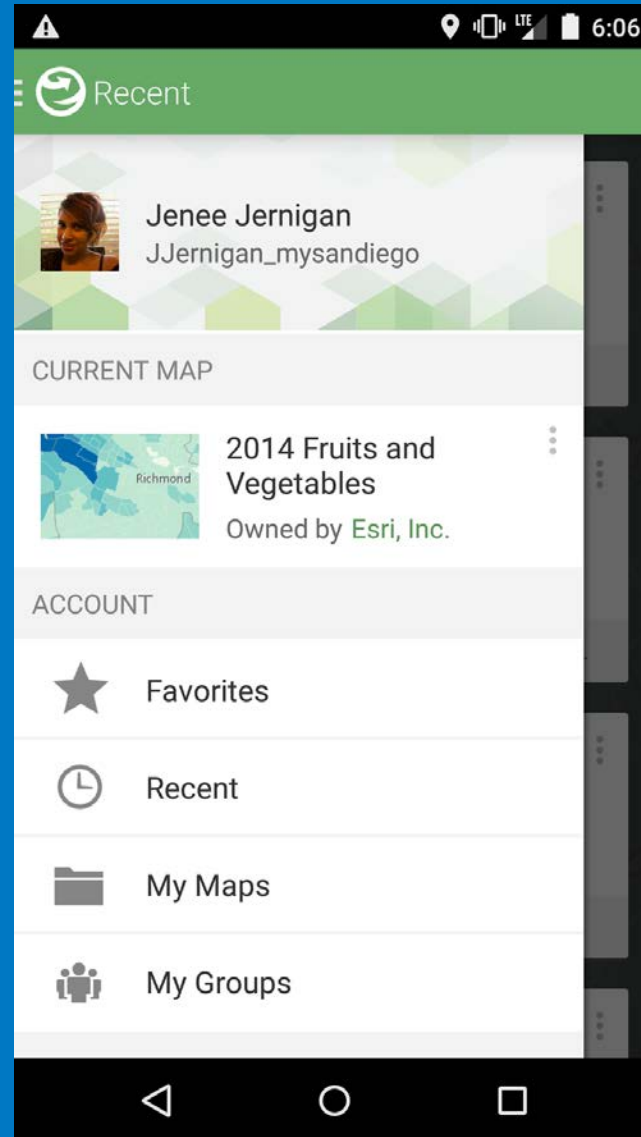
“Flat” style

More minimal, sleeker lines - aka “Modern”

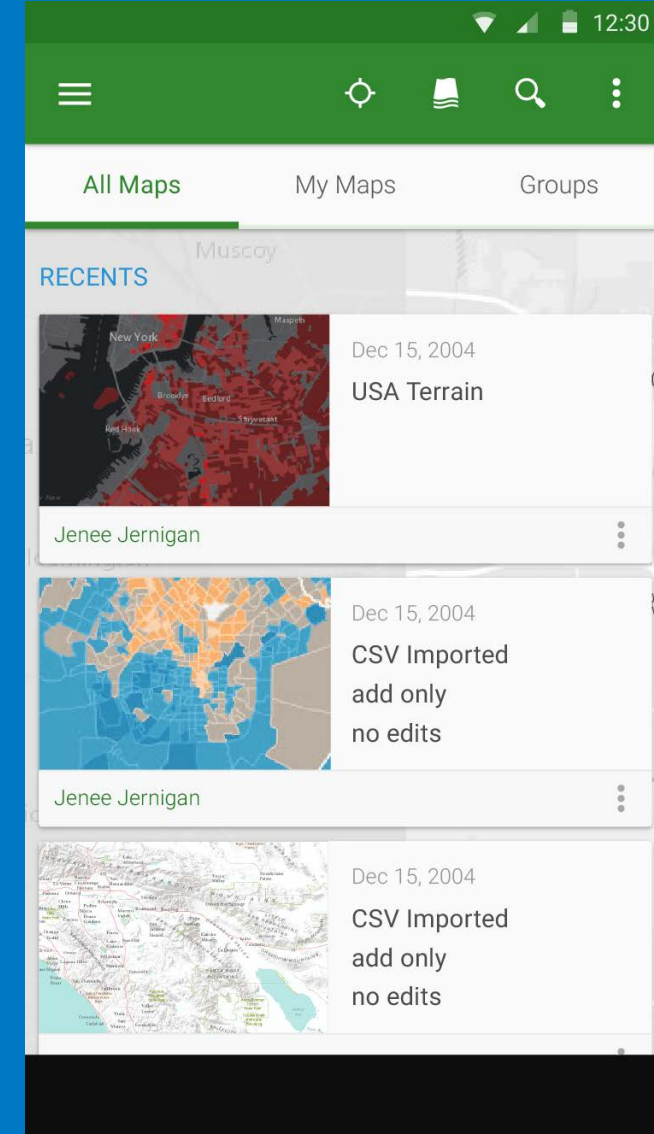
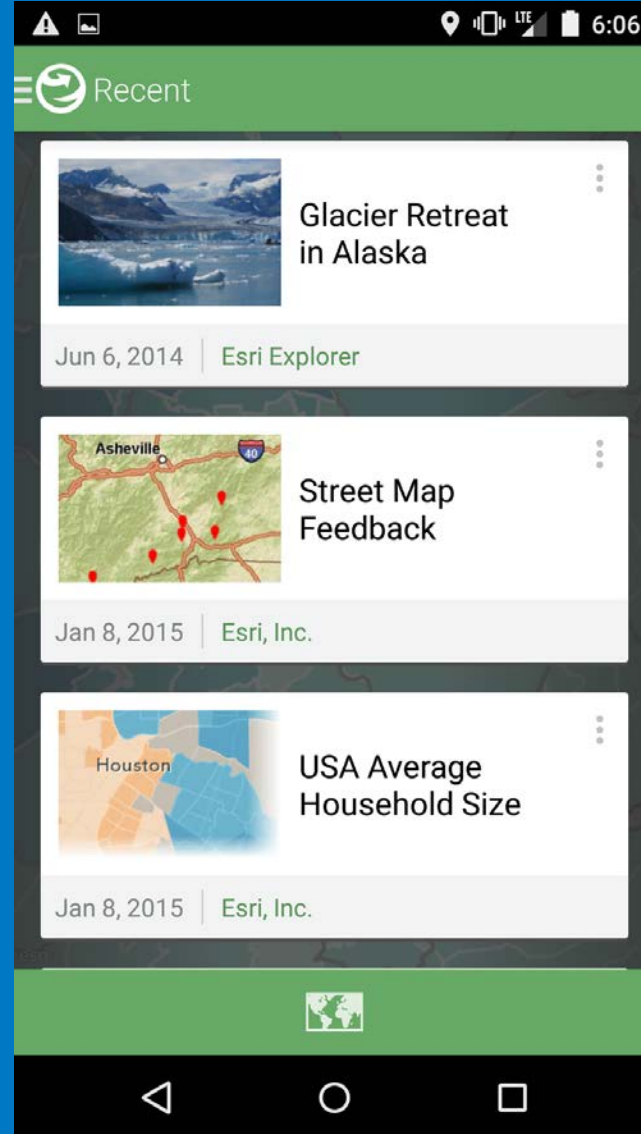
Beginning to incorporate animations as transitions

Consistency across our apps

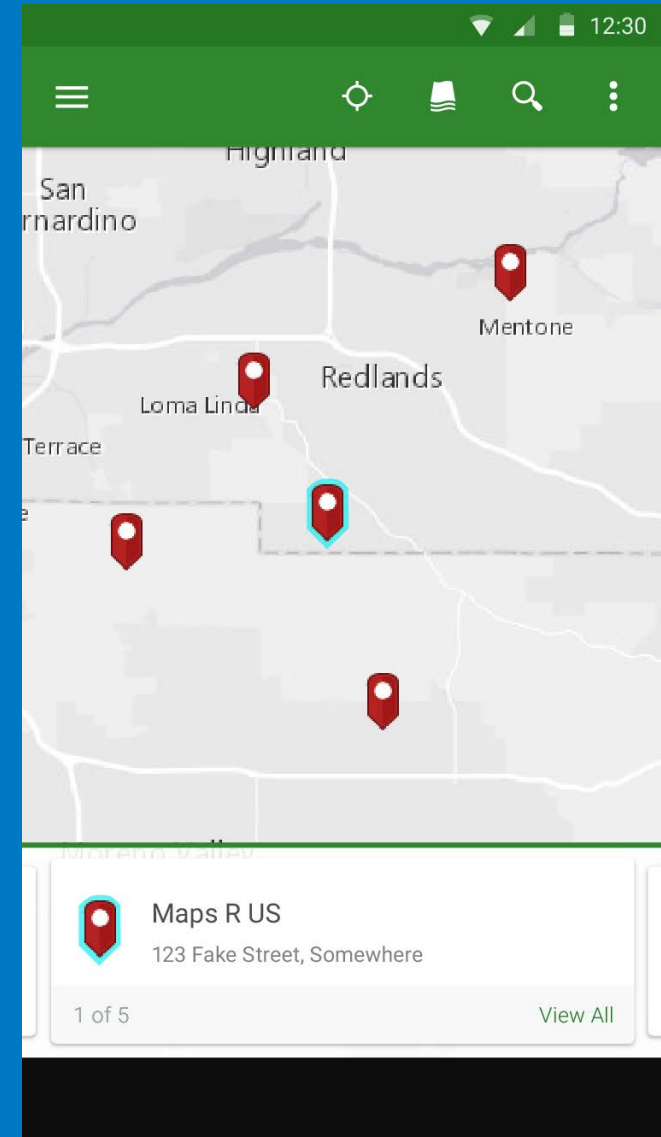
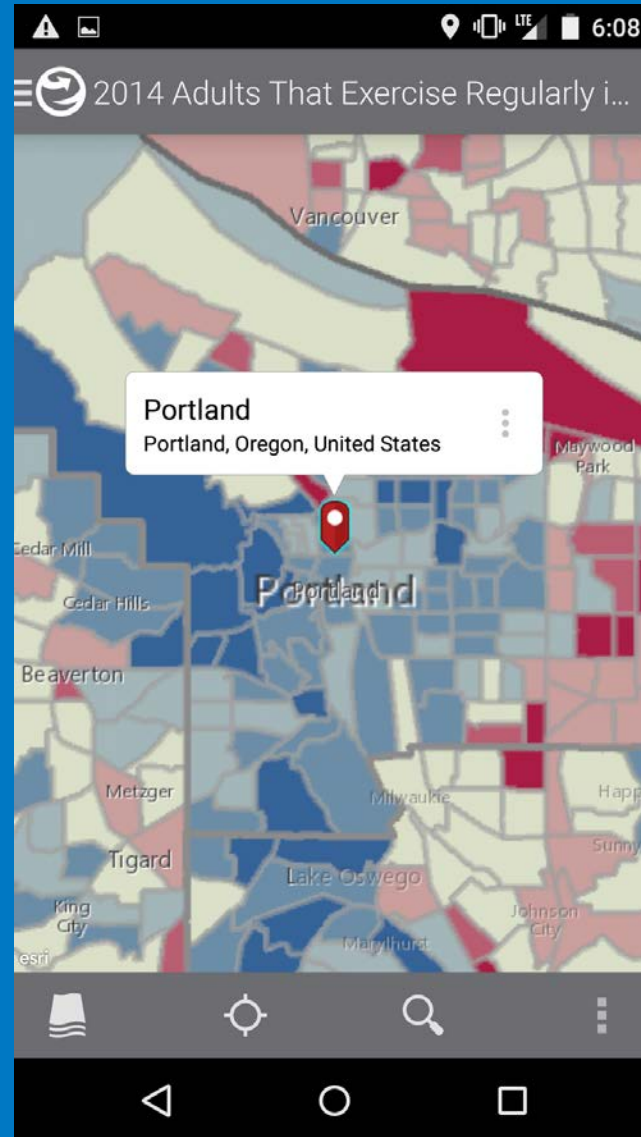
Old and new



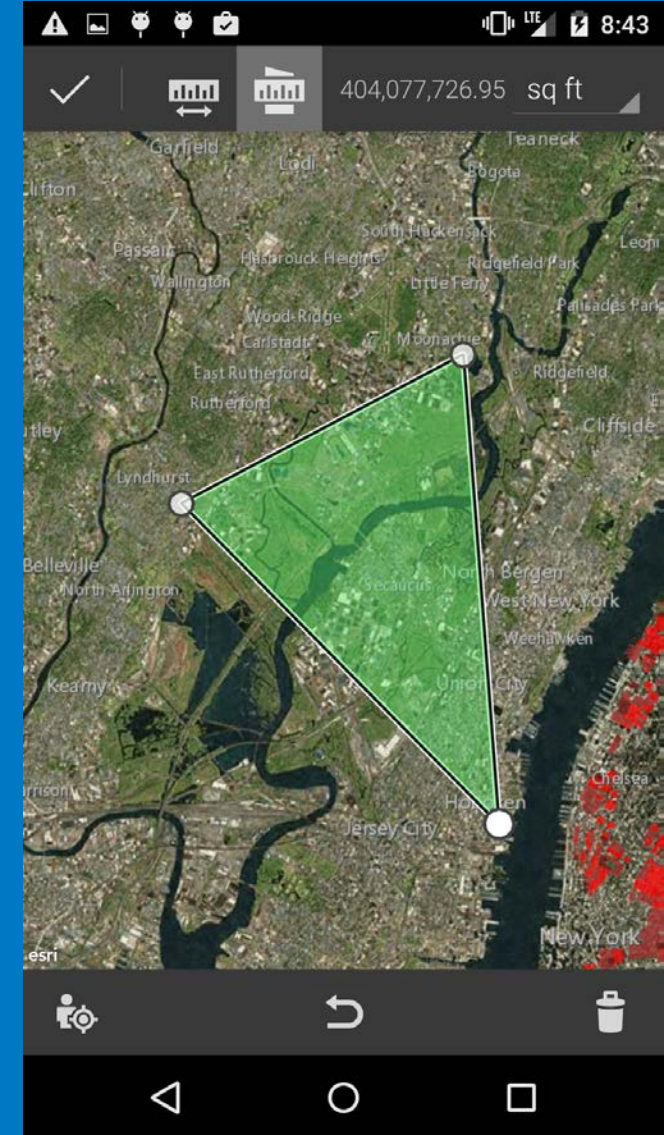
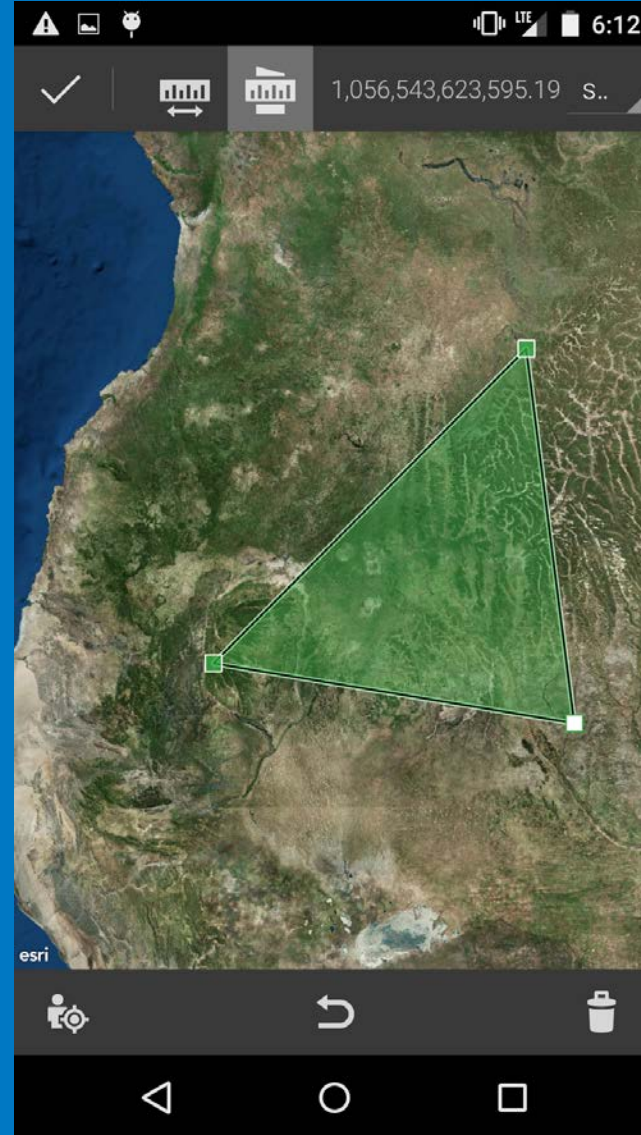
Old and new

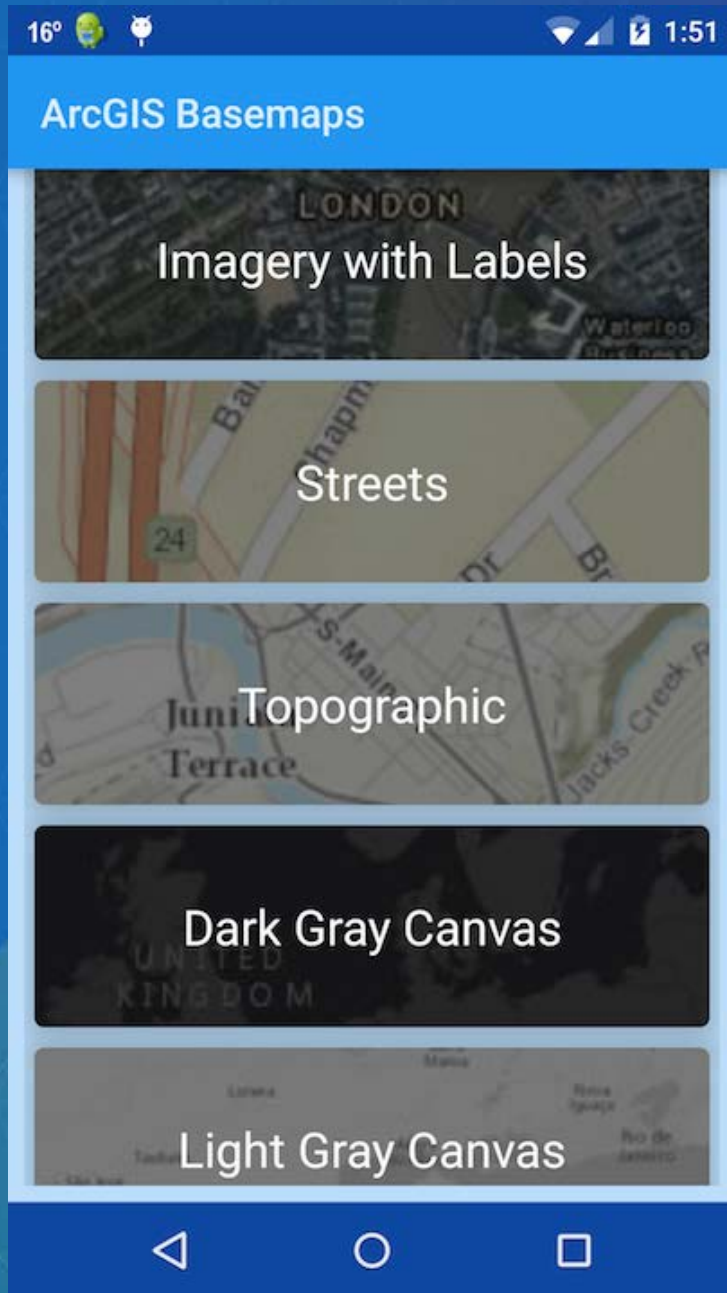


Old and new



Old and not as new...





Material design demo

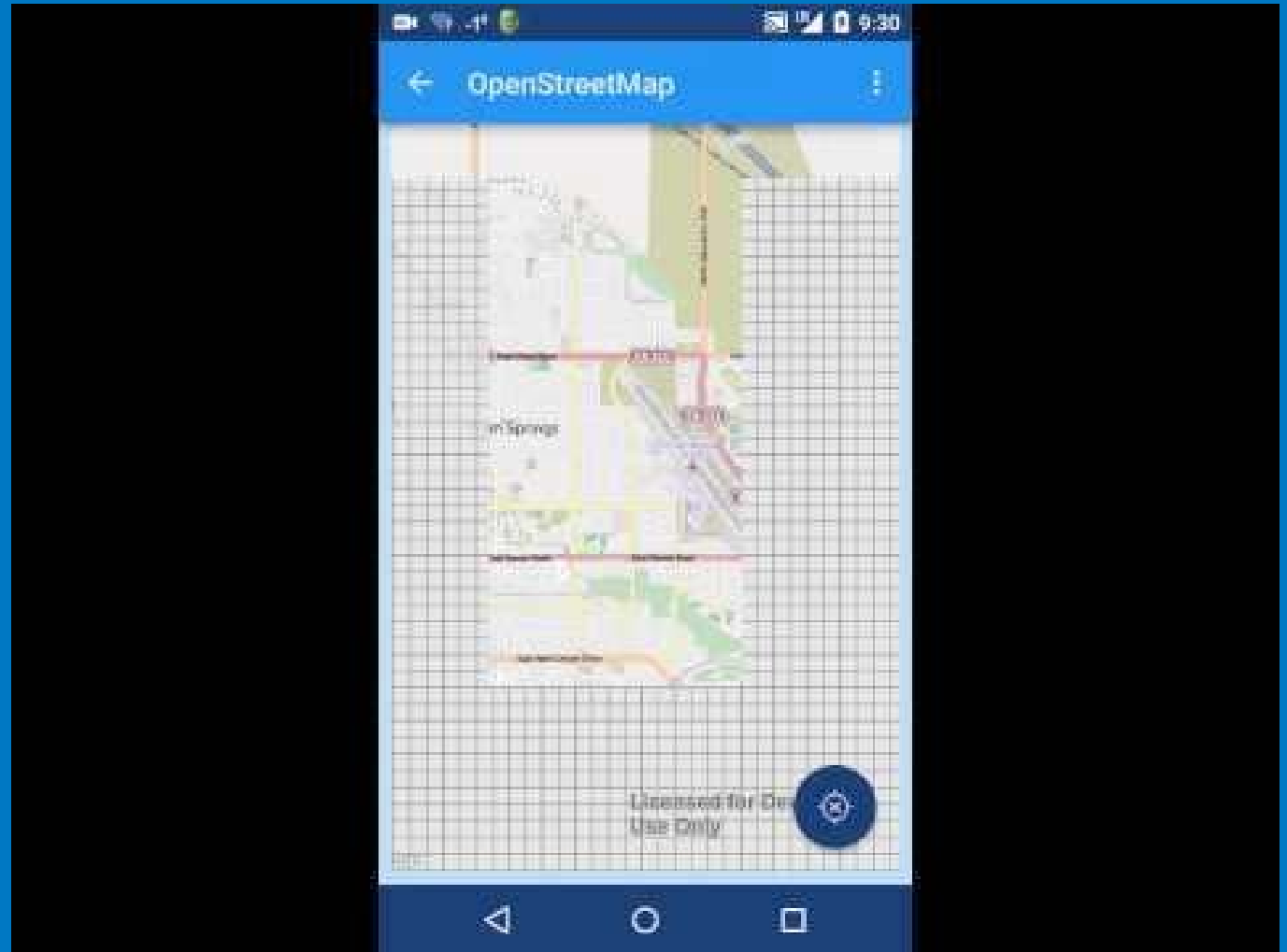
ArcGIS Basemaps demo & code

Dan O'Neill

Material Design

Dan

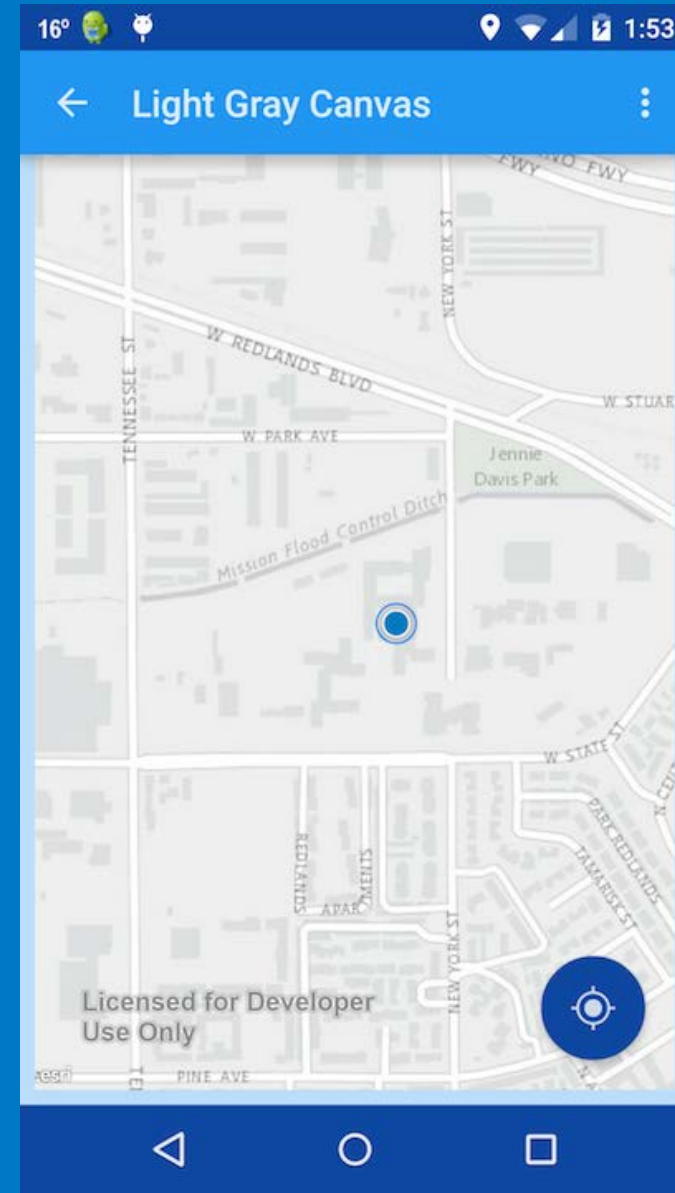
- **ArcGIS Basemaps app**
 - **DEMO**



Material Design

Dan

- **ArcGIS Basemaps app**
 - **Material design UI components used**
 - **RecyclerView**
 - **CardView**
 - **Floating Action Button**
 - **Animations**
 - **Ripples**

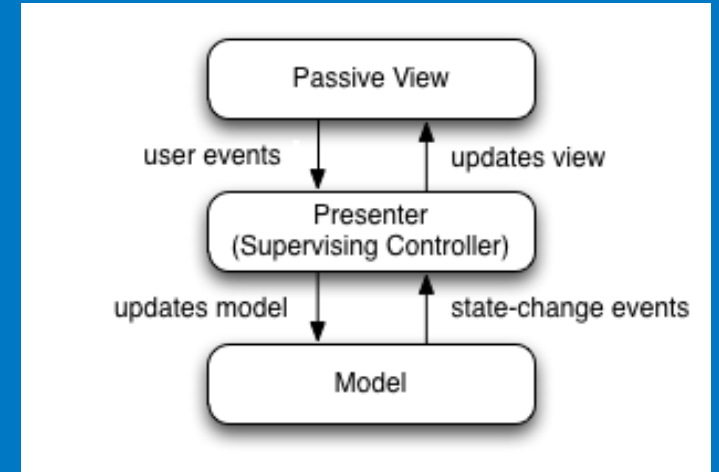


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Material Design

Dan

- **ArcGIS Basemaps app**
 - **Model - View - Presenter pattern**
 - **Model**
 - Defines data to be displayed
 - **View**
 - Displays data
 - **Presenter**
 - Middleman
 - Retrieves data from model, formats for view



Material Design - Model

Dan

- **Basemaps**
 - **BasemapItem**
 - **Defined our basemap object**
 - **PortalItem**
 - **Bitmap Image**
 - **BasemapAdapter**
 - **Extends RecyclerView.Adapter**
 - **ViewHolder pattern required by API**
 - **BasemapViewHolder**
 - **Stores each of the component views**
 - **BasemapClickListener**
 - **Listeners are not provided by RecyclerView**

Material Design - Presenter

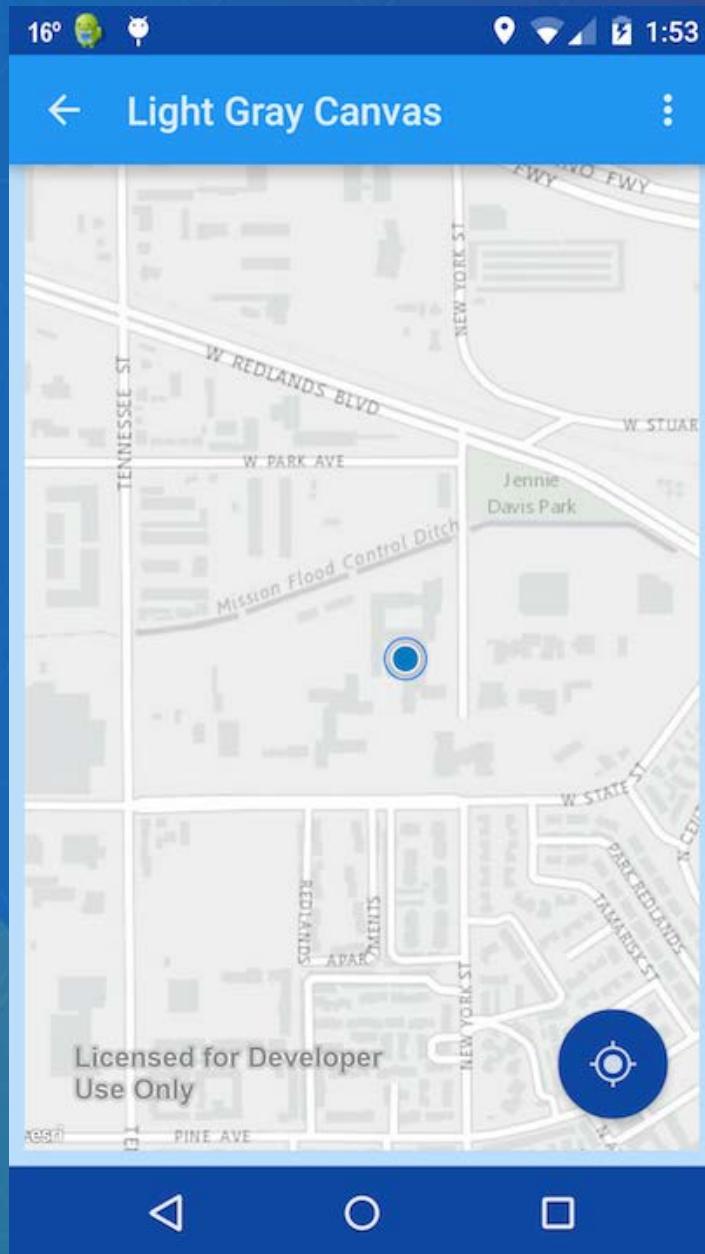
Dan

- **ArcGIS Android Portal API**
 - **FetchBasemapItemId**
 - Queries ArcGIS online for Basemap items
 - Background thread
 - **OnTaskCompleted**
 - Interface to process response from background thread

Material Design - View

Dan

- **User Interface**
 - **MainActivity**
 - **Displays results of data from Presenter**
 - **Basemaps images and Titles displayed as Cards**
 - **MapActivity**
 - **Recieves BasemapItems from MainActivity**
 - **Creates a MapView to display the map**
 - **Floating Action Bar Button to turn on/off you location**



Material design

ArcGIS Basemaps code

Dan O'Neill



Thanks!

please rate our session