



Android Week Three

Yehyun Ryu
UMN App Developers



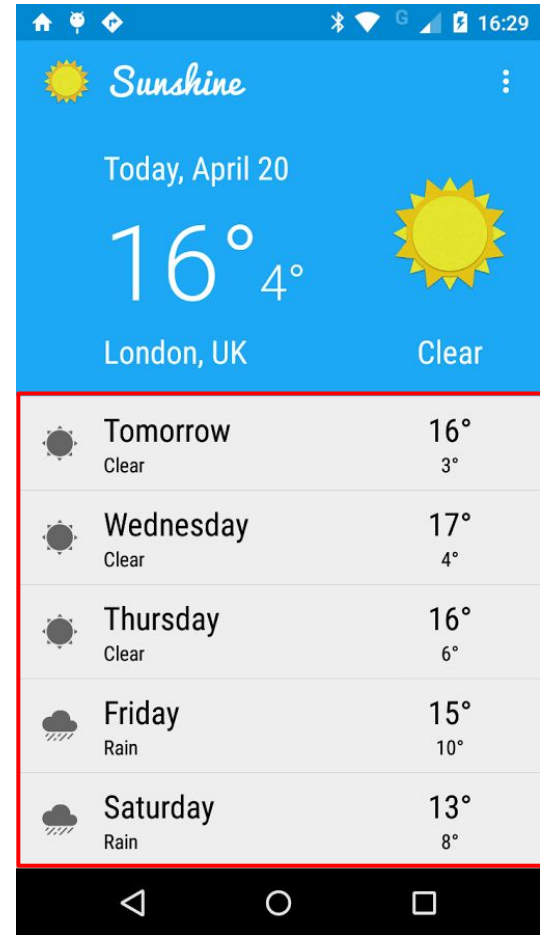
So Far ...

- XML
- Activity
- View
- ViewGroup
- Created layout for a single weather item



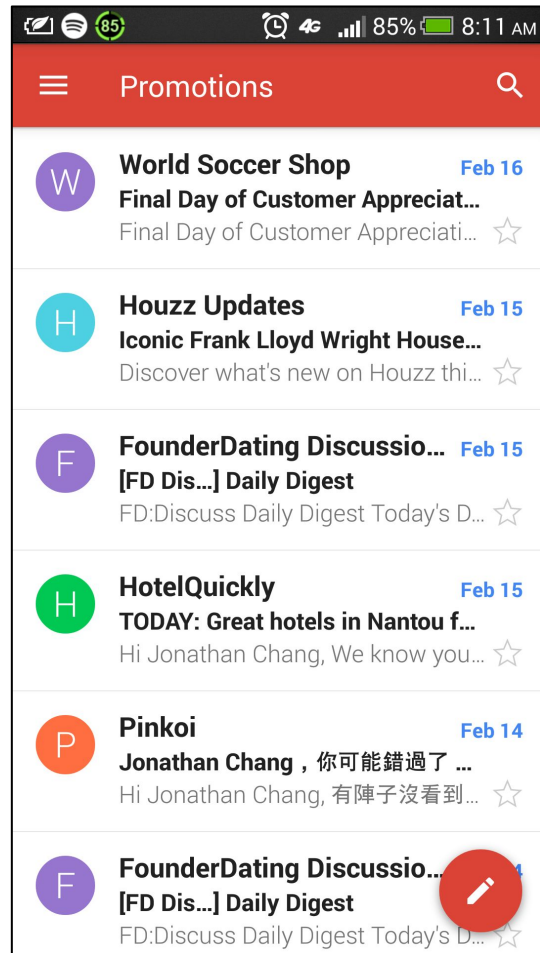
Today's Goal

- Learn about **RecyclerView**
- Create a list of weather items using RecyclerView
- Create layout for MainActivity
- Start using **Java**

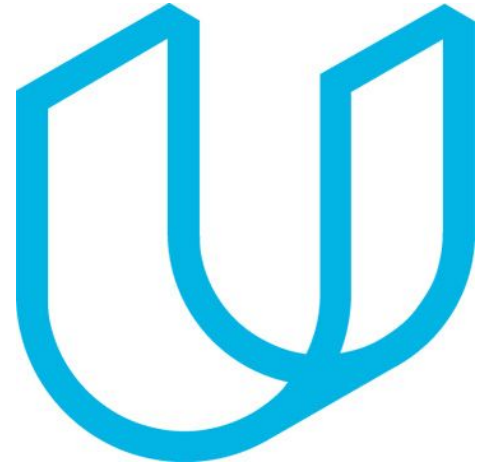
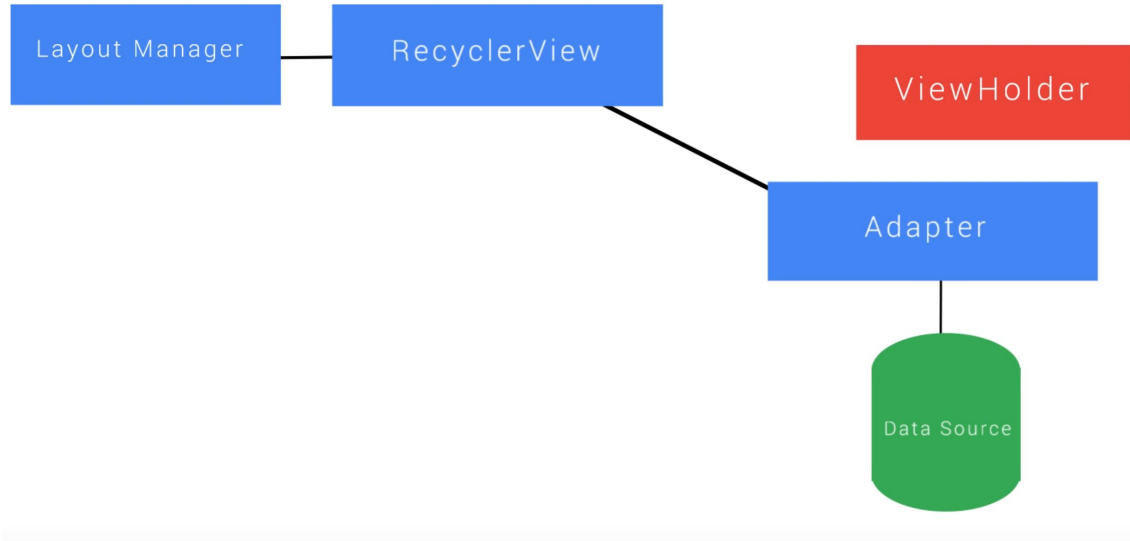


RecyclerView

- A view that displays a list of small items
- Flexible
- Efficient



How RecyclerView Works



Adapter

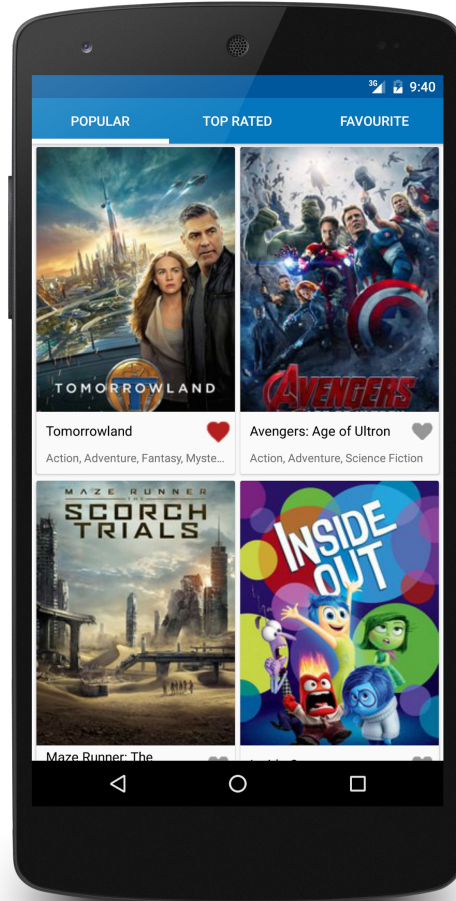
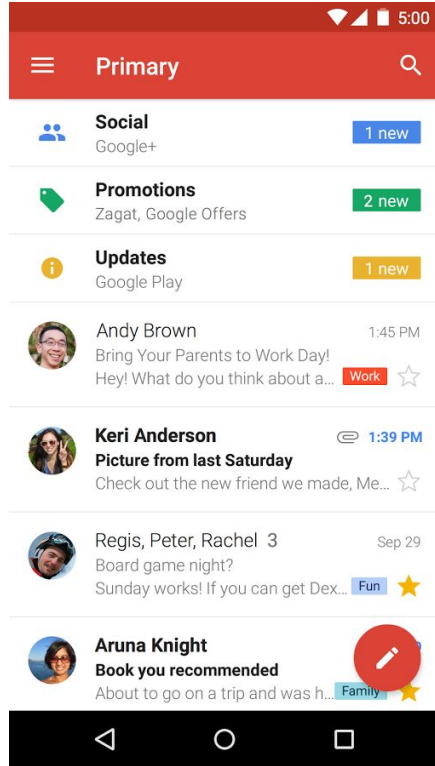
1. RecyclerView calls Adapter and asks for a ViewHolder at position x
 2. Adapter takes the position and finds the right object or attributes to use
 3. Adapter binds the attributes to the ViewHolder and return that to the RecyclerView
- Need to extend from RecyclerView.Adapter class

ViewHolder

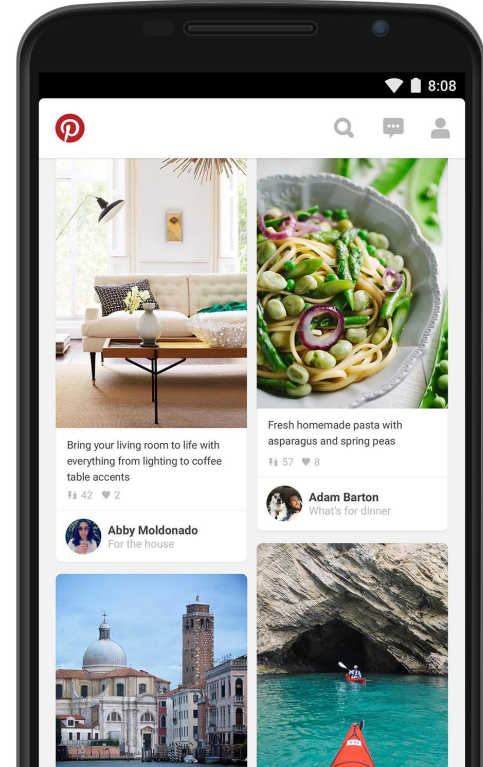
- Object that holds the view that needs to be returned to RecyclerView
- Caches (stores) **references** to views in the individual item layout file
- Less findViewById() calls

LayoutManager

- Responsible for displaying the views in a certain orientation or style
- LinearLayoutManager
 - vertical/horizontal
- GridLayoutManager
- StaggeredGridLayoutManager

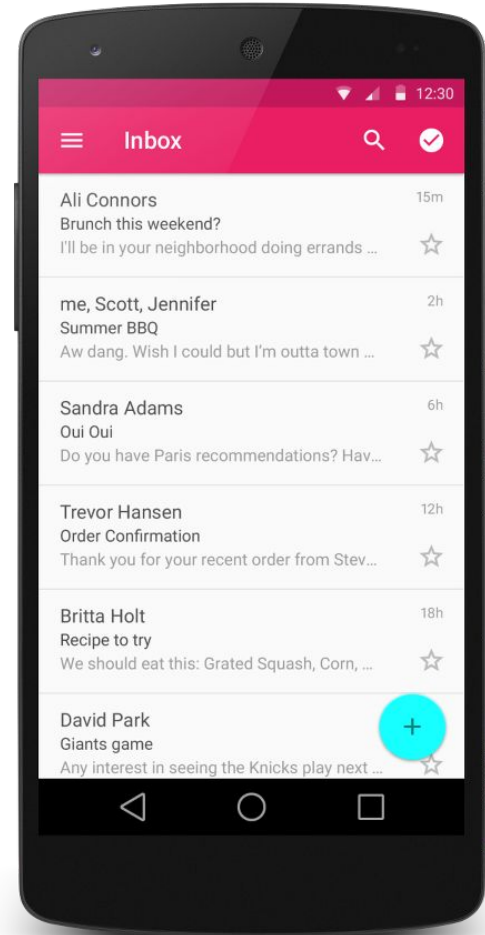


Discover and save creative ideas
for any project or interest



ListView

- A view that displays a list of small items
- Primitive, outdated version of RecyclerView
- Picture on right is most likely RecyclerView



ListView vs RecyclerView

- **ListView does not force developers to recycle views**
- Another abstraction from container (layout manager)
 - More Flexible UI
 - Vertical/Horizontal, Grid, Staggered Grid
- Better Animations
- <https://stackoverflow.com/questions/26728651/recyclerview-vs-listview>

Let's Start Coding!

How to Create RecyclerView

1. Create Item Layout File
2. Add RecyclerView Dependency
 - a. implementation 'com.android.support:recyclerview-v7:27.0.2'
3. Add RecyclerView to Layout
4. Create Adapter and ViewHolder Class
 - a. Implement methods and constructor
5. Instantiate RecyclerView and Attach Adapter and LayoutManager

ConstraintLayout and match_parent

- ConstraintLayout does not support match_parent
- The width and height will be **hardcoded**
- Instead set width and height to **0dp**
 - Fills width and height between the horizontal and vertical constraints

findViewById()

- Most basic and often method in Android development
- Returns an view that references a specific view in a layout file
- Uses id to find a specific view
- `TextView exampleView = (TextView) findViewById(R.id.example_view);`

Next Week

- Networking
- Setup Open Weather Map API

