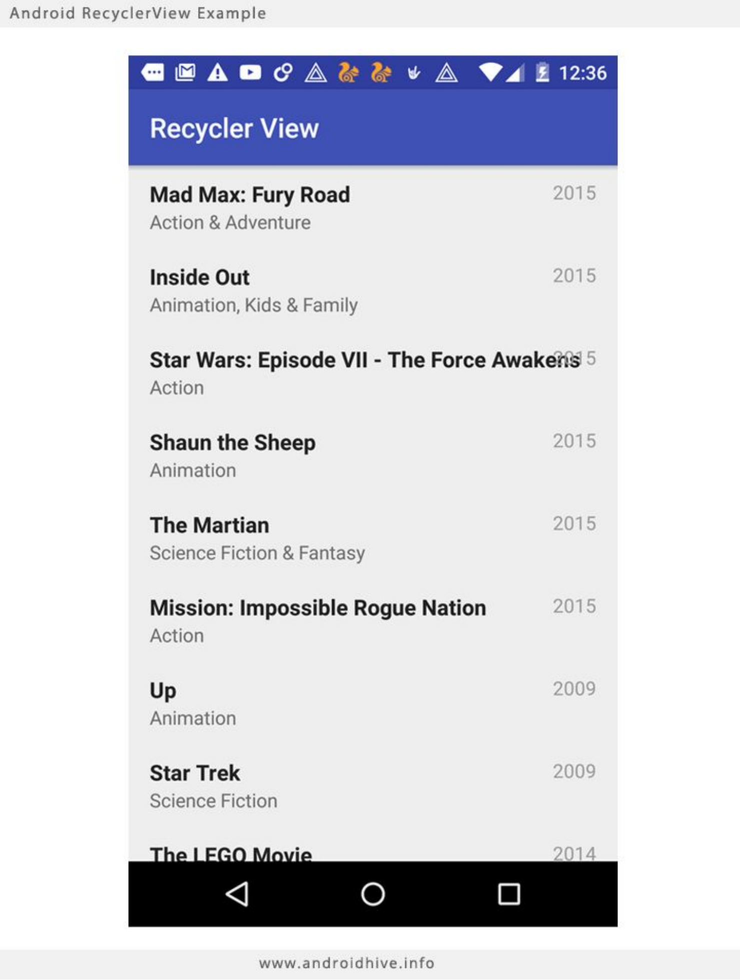
Android Week Four

Yehyun Ryu
UMN App Developers

Outline

- ListView
  - ArrayAdapter
  - Custom ListView
- CardView



Android RecyclerView Example

12:36

Recycler View

Mad Max: Fury Road 2015
Action & Adventure

Inside Out 2015
Animation, Kids & Family

Star Wars: Episode VII - The Force Awakens 2015
Action

Shaun the Sheep 2015
Animation

The Martian 2015
Science Fiction & Fantasy

Mission: Impossible Rogue Nation 2015
Action

Up 2009
Animation

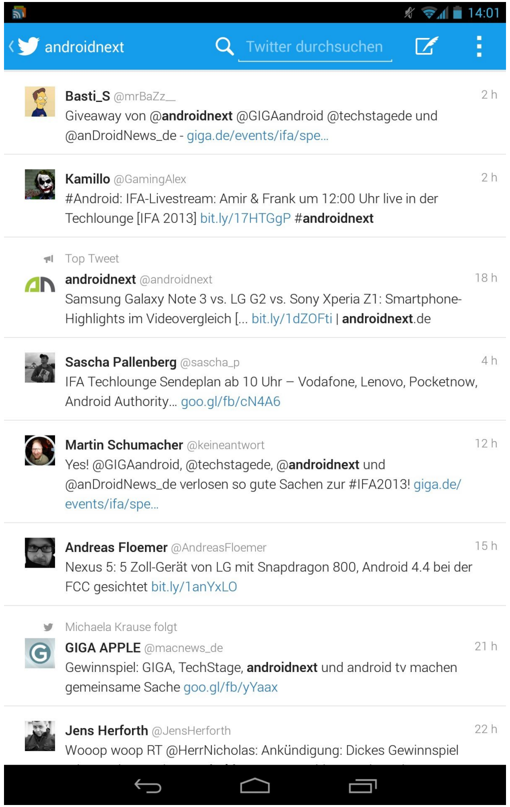
Star Trek 2009
Science Fiction

The LEGO Movie 2014

www.androidhive.info

ListView

- ViewGroup that displays a list of scrollable items
- Three Components
  - Item Layout
  - ArrayAdapter
  - ListView



Basti_S @mrBaZz__ 2 h
Giveaway von @**androidnext** @GIGAandroid @techstagede und @anDroidNews_de - giga.de/events/ifa/spe...

Kamillo @GamingAlex 2 h
#Android: IFA-Livestream: Amir & Frank um 12:00 Uhr live in der Techlounge [IFA 2013] bit.ly/17HTGgP #**androidnext**

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androidnext @androidnext 18 h
Samsung Galaxy Note 3 vs. LG G2 vs. Sony Xperia Z1: Smartphone-Highlights im Videovergleich [... bit.ly/1dZOFti | **androidnext**.de

Sascha Pallenberg @sascha_p 4 h
IFA Techlounge Sendeplan ab 10 Uhr – Vodafone, Lenovo, Pocketnow, Android Authority... goo.gl/fb/cN4A6

Martin Schumacher @keineantwort 12 h
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Andreas Floemer @AndreasFloemer 15 h
Nexus 5: 5 Zoll-Gerät von LG mit Snapdragon 800, Android 4.4 bei der FCC gesichtet bit.ly/1anYxLO

Michaela Krause folgt
GIGA APPLE @macnews_de 21 h
Gewinnspiel: GIGA, TechStage, **androidnext** und android tv machen gemeinsame Sache goo.gl/fb/yYaax

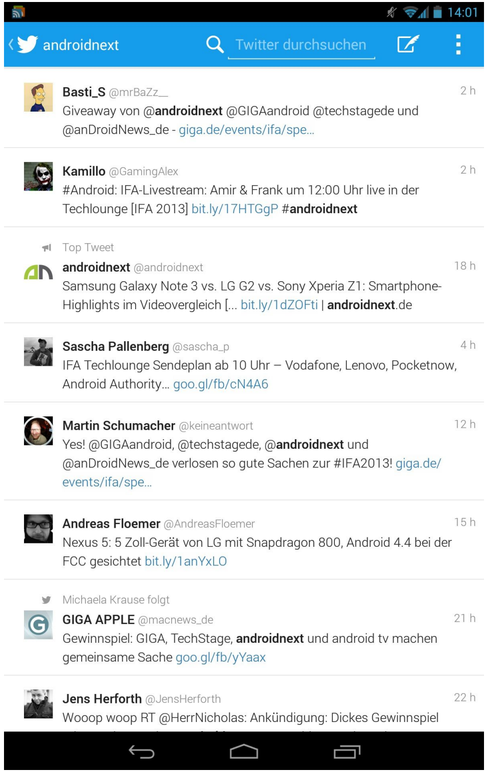
Jens Herforth @JensHerforth 22 h
Wooop woop RT @HerrNicholas: Ankündigung: Dickes Gewinnspiel

When To Use ListView

- Fixed number of Views that can fit in a screen ✗

- Unknown number of Views ✓

When To Use ListView



14:01

androidnext Twitter durchsuchen

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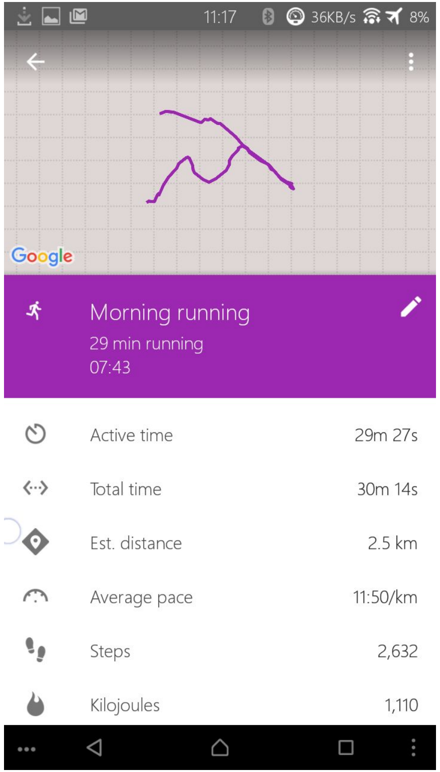
✓



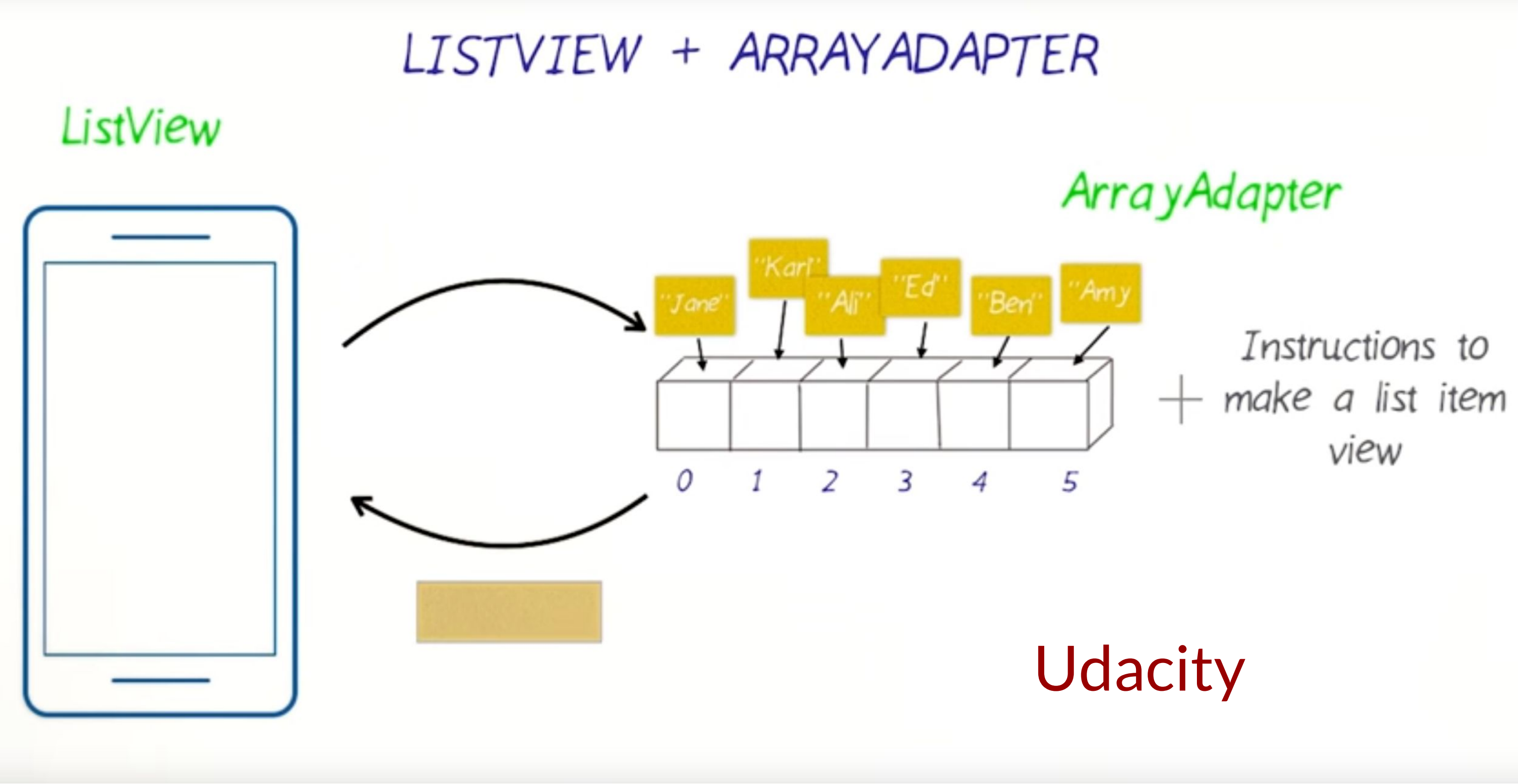
11:17 36KB/s 8%

Morning running
29 min running
07:43

Active time	29m 27s
Total time	30m 14s
Est. distance	2.5 km
Average pace	11:50/km
Steps	2,632
Kilojoules	1,110

✗

How ListView Works



Summary

- ArrayAdapter provides the data for ListView
  - Converts the data into a view and gives to ListView
- Number of Items (Data)
- View item at index
- View item only requested when needed
- Scrap Views are recycled
  - Lot less expensive
  - Uses less memory and processing power

Follow Me!

Simple ListView

- Start with default simple ListView

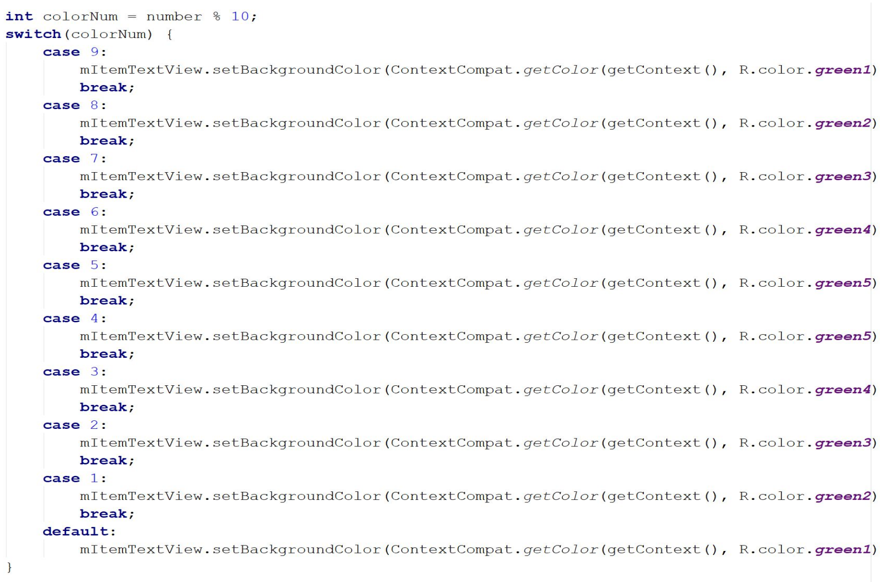
1. Create ListView in activity_main.xml
2. Bind ListView in MainActivity.java
3. Create ArrayList to hold data (integer)
4. Initialize ArrayAdapter
   a. ArrayAdapter<T> arrayAdapter = new ArrayAdapter<T>(context, item layout file, data array);
5. Set ArrayAdapter to ListView
   a. mListView.setAdapter(arrayAdapter);

Customize ListView

1. Create layout for itemview (itemview.xml)
2. Create custom adapter class (CustomAdapter.java)
    a. Extend ArrayAdapter<T>
    b. Create constructor
    c. Implement getCount() - return size of data array
    d. Implement getView(int position, View convertView, ViewGroup viewGroup)
        i. Position - index of data array
        ii. convertView - the old view to reuse if available
        iii. Parent - parent view that this view will attach to
3. Go back to MainActivity.java and change ArrayAdapter to CustomAdapter and set it as adapter to ListView

Colorize Background

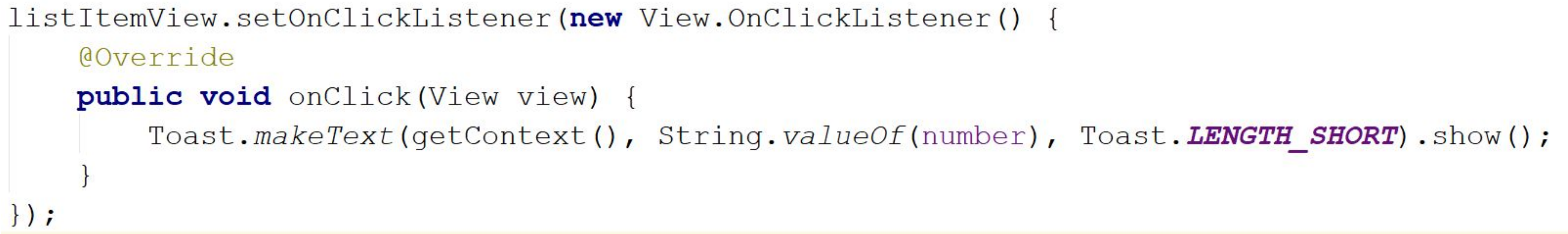
1. Set Color Resources in color.xml
2. Depending on the number, set background color of textview within item layout



```java
int colorNum = number % 10;
switch(colorNum) {
    case 9:
        mItemTextView.setBackgroundColor(ContextCompat.getColor(getContext(), R.color.green1));
        break;
    case 8:
        mItemTextView.setBackgroundColor(ContextCompat.getColor(getContext(), R.color.green2));
        break;
    case 7:
        mItemTextView.setBackgroundColor(ContextCompat.getColor(getContext(), R.color.green3));
        break;
    case 6:
        mItemTextView.setBackgroundColor(ContextCompat.getColor(getContext(), R.color.green4));
        break;
    case 5:
        mItemTextView.setBackgroundColor(ContextCompat.getColor(getContext(), R.color.green5));
        break;
    case 4:
        mItemTextView.setBackgroundColor(ContextCompat.getColor(getContext(), R.color.green5));
        break;
    case 3:
        mItemTextView.setBackgroundColor(ContextCompat.getColor(getContext(), R.color.green4));
        break;
    case 2:
        mItemTextView.setBackgroundColor(ContextCompat.getColor(getContext(), R.color.green3));
        break;
    case 1:
        mItemTextView.setBackgroundColor(ContextCompat.getColor(getContext(), R.color.green2));
        break;
    default:
        mItemTextView.setBackgroundColor(ContextCompat.getColor(getContext(), R.color.green1));
}
```

Add OnClick to Items

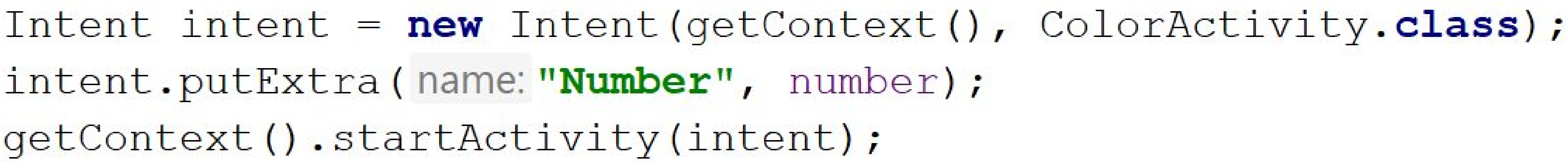
- setOnClickListener() to listItemView



```java
listItemView.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        Toast.makeText(getContext(), String.valueOf(number), Toast.LENGTH_SHORT).show();
    }
});
```

Intent Data Passing

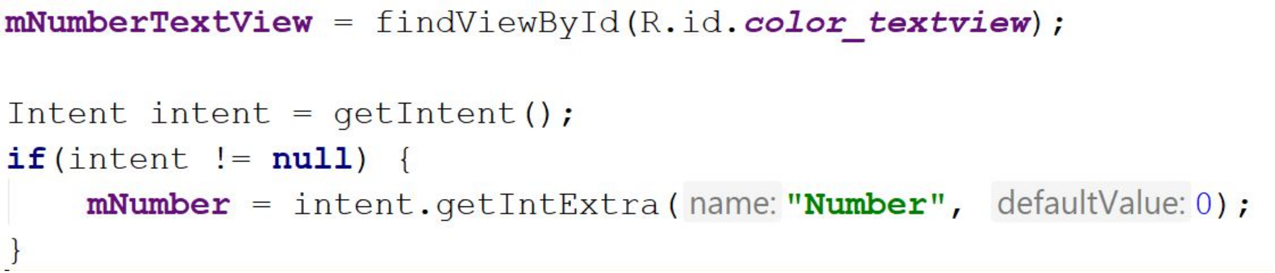
- Intent intent = new Intent(context, Activity.class);
- intent.putExtra(key, value);



```
Intent intent = new Intent(getContext(), ColorActivity.class);
intent.putExtra( name: "Number", number);
getContext().startActivity(intent);
```

Create ColorActivity

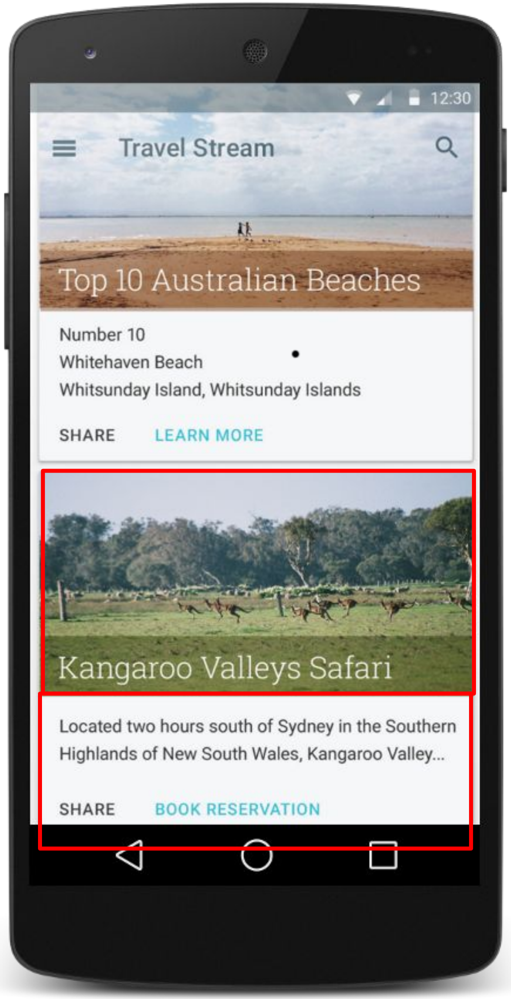
- Create ColorActivity
- Create TextView in activity_color.xml and bind view in ColorActivity.java
- getIntent()
  - Extract number
  - Set background and text



```
mNumberTextView = findViewById(R.id.color_textview);

Intent intent = getIntent();
if(intent != null) {
    mNumber = intent.getIntExtra( name: "Number",  defaultValue: 0);
}
```

CardView

- ViewGroup with rounded corners and elevation.
- Elevation: vertical distance from screen
  - 0dp: no shadow
  - x dp > 0: shadow
- More distinction, more visible
- Looks better

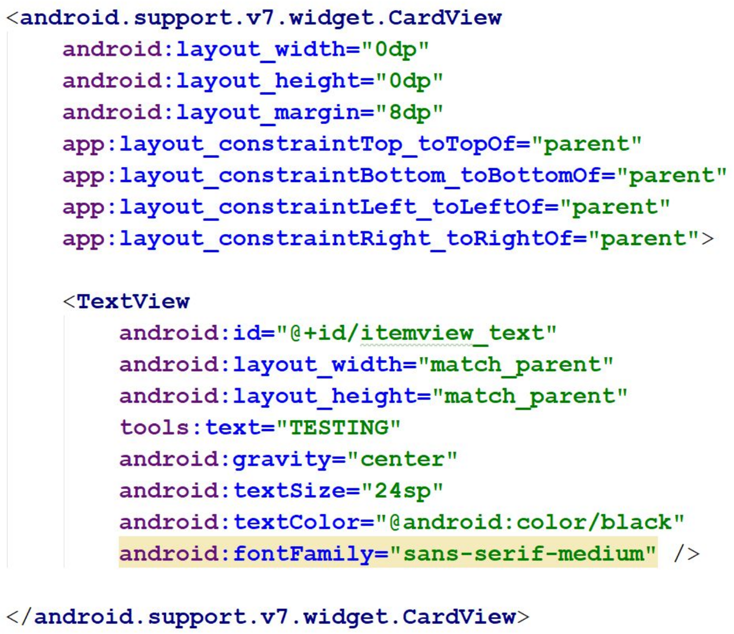


Number 10
Whitehaven Beach
Whitsunday Island, Whitsunday Islands

Located two hours south of Sydney in the Southern Highlands of New South Wales, Kangaroo Valley...

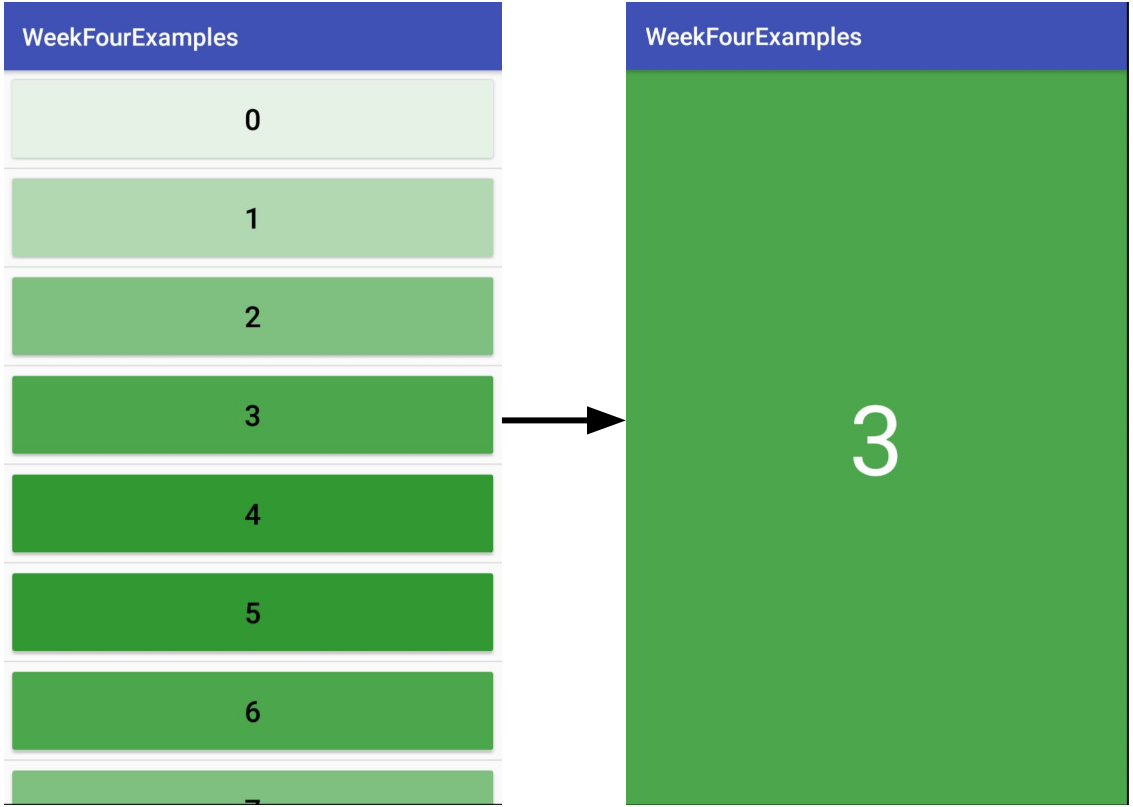
Create CardView

- Add this line in build.gradle (app)
    - compile 'com.android.support:cardview-v7:26.1.0
    - Sync gradle
- Create CardView in itemview.xml
    - Put textview within cardview



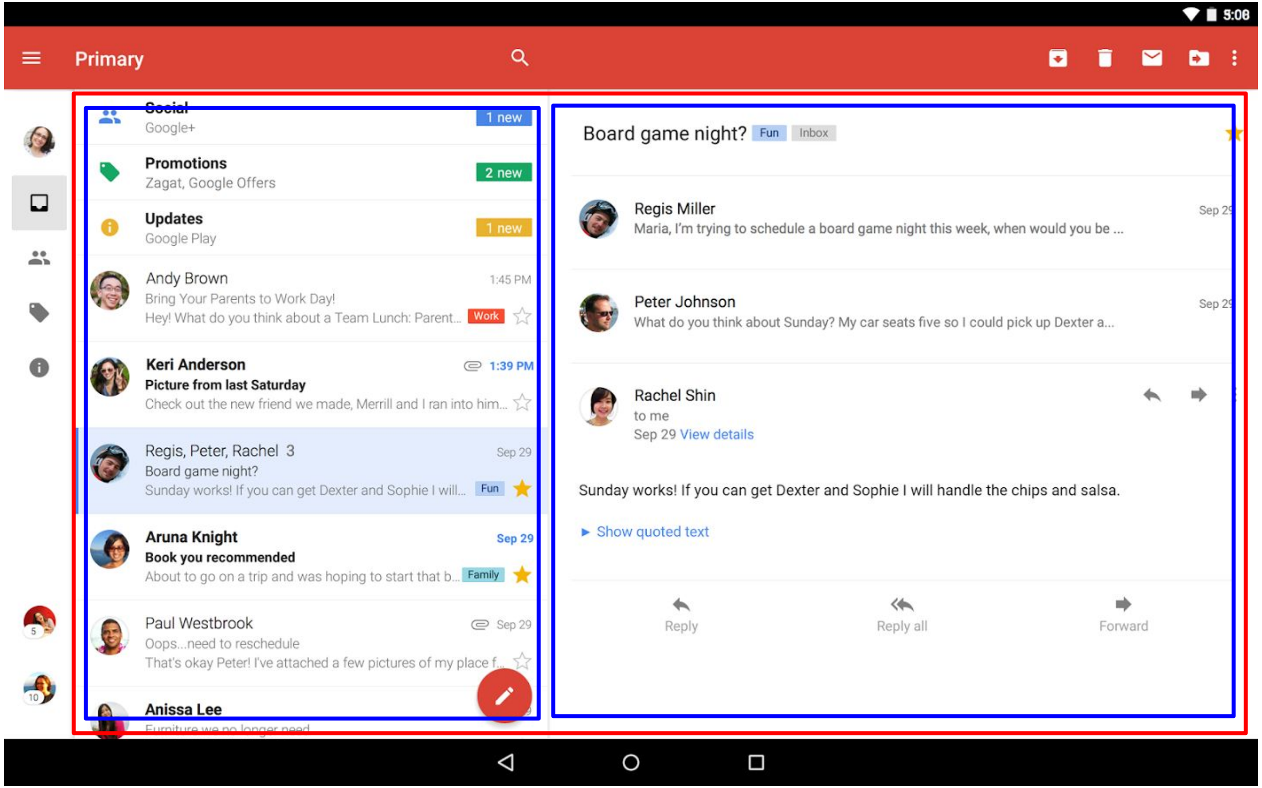
```
<android.support.v7.widget.CardView
    android:layout_width="0dp"
    android:layout_height="0dp"
    android:layout_margin="8dp"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent">

    <TextView
        android:id="@+id/itemview_text"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        tools:text="TESTING"
        android:gravity="center"
        android:textSize="24sp"
        android:textColor="@android:color/black"
        android:fontFamily="sans-serif-medium" />

</android.support.v7.widget.CardView>
```

Finished!



Next Week

- RecyclerView
- Fragments



Social
Google+
1 new

Promotions
Zagat, Google Offers
2 new

Updates
Google Play
1 new

Andy Brown 1:45 PM
Bring Your Parents to Work Day!
Hey! What do you think about a Team Lunch: Parent... Work

Keri Anderson 1:39 PM
Picture from last Saturday
Check out the new friend we made, Merrill and I ran into him...

Regis, Peter, Rachel 3 Sep 29
Board game night?
Sunday works! If you can get Dexter and Sophie I will... Fun

Aruna Knight Sep 29
Book you recommended
About to go on a trip and was hoping to start that b... Family

Paul Westbrook Sep 29
Oops...need to reschedule
That's okay Peter! I've attached a few pictures of my place f...

Anissa Lee
Furniture we no longer need

Board game night? Fun Inbox

Regis Miller Sep 29
Maria, I'm trying to schedule a board game night this week, when would you be ...

Peter Johnson Sep 29
What do you think about Sunday? My car seats five so I could pick up Dexter a...

Rachel Shin
to me
Sep 29 View details

Sunday works! If you can get Dexter and Sophie I will handle the chips and salsa.

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