CS194A

Android Programming Workshop

Lecture 4: April 29, 2020

Rahul Pandey

Outline

- Logistics
- RecyclerView review
- Intents
- Activity lifecycle

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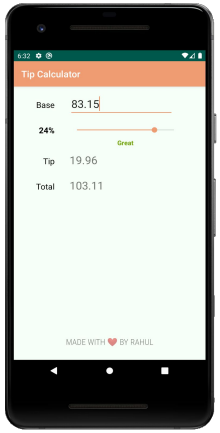
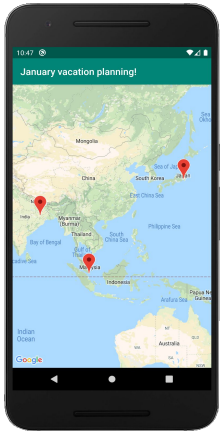
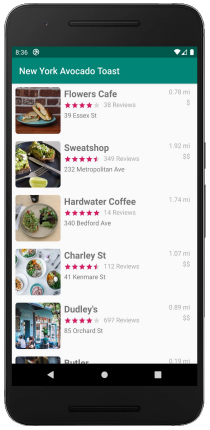
- **Logistics**
- RecyclerView review
- Intents
- Activity lifecycle







Assn 1: Tip Calculator

Assn 2: Google Maps

Assn 3: Yelp Clone

Industry panel discussion

1 2 3 4 5 6 7 8 9

Week #

Tip Calculator **highlights**

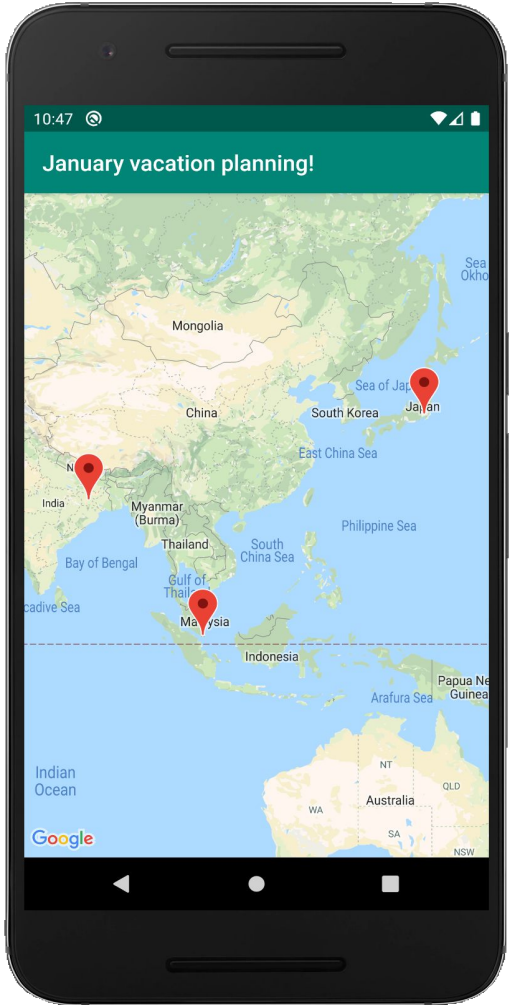
Kyle Nguyen

Tip Calculator **highlights**

Qiwen Wang

Assignment 2- My Maps

- RecyclerView
- Google Maps integration
- Activities and intents



My Maps app

- Project due Sunday, **May 10, 11:59pm**
- Partner feedback due Wednesday, **May 13, 4:30pm**
- Submission through Canvas!

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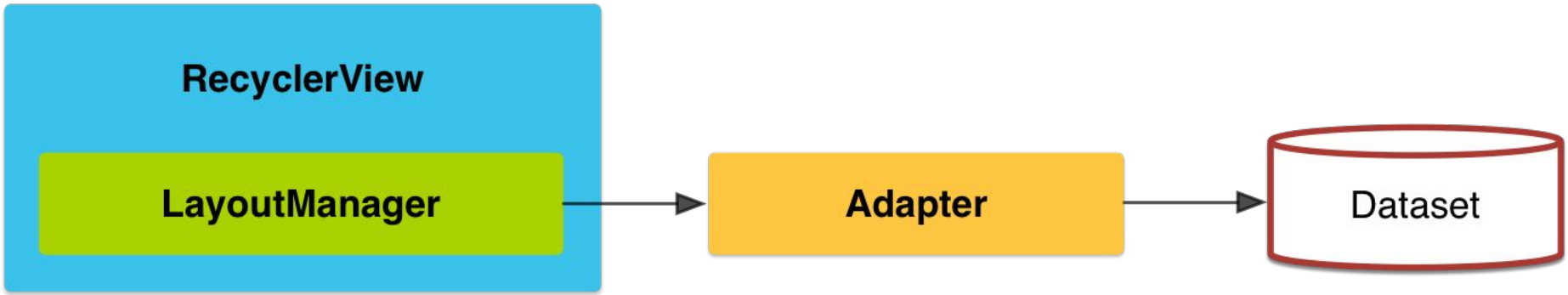
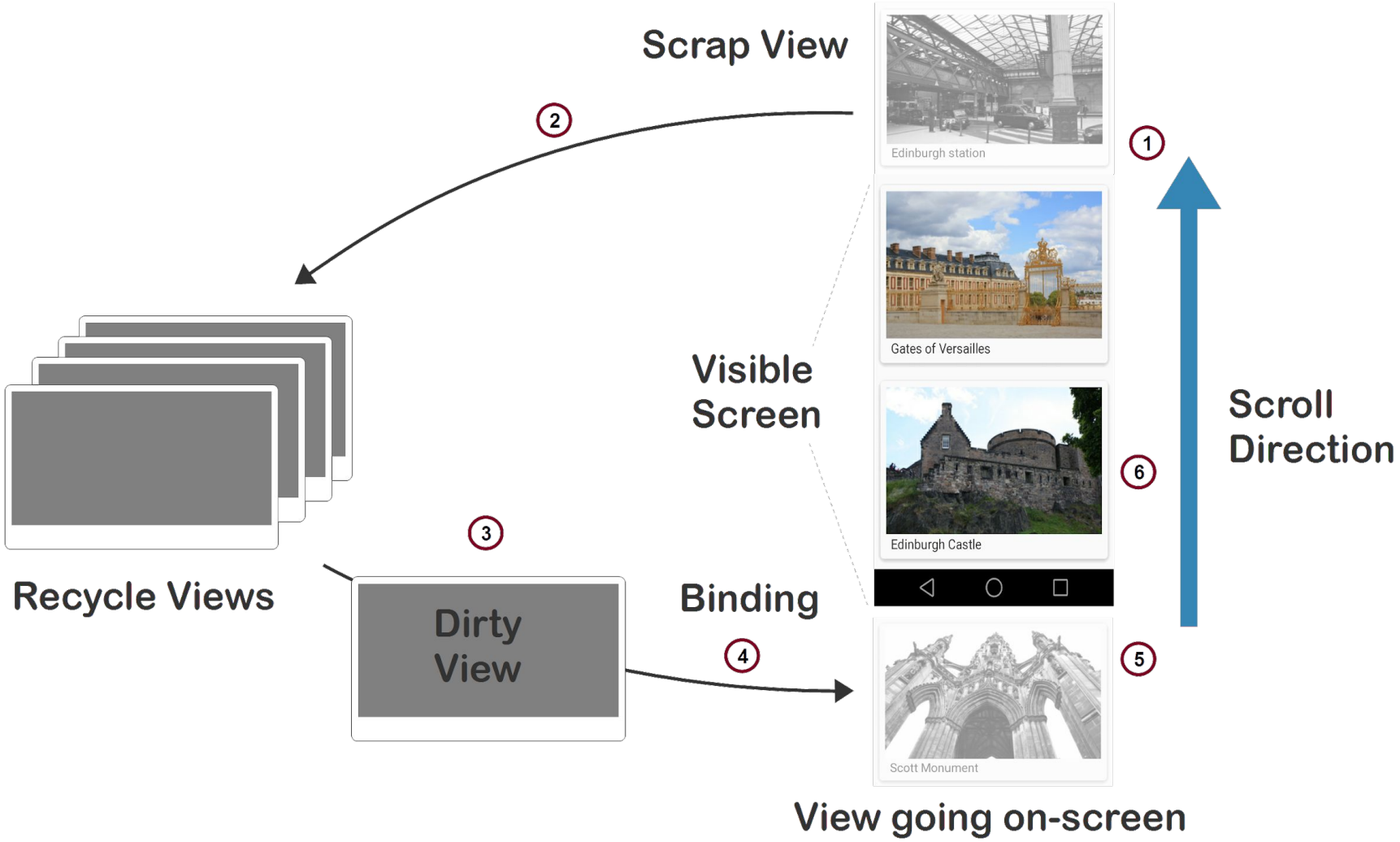
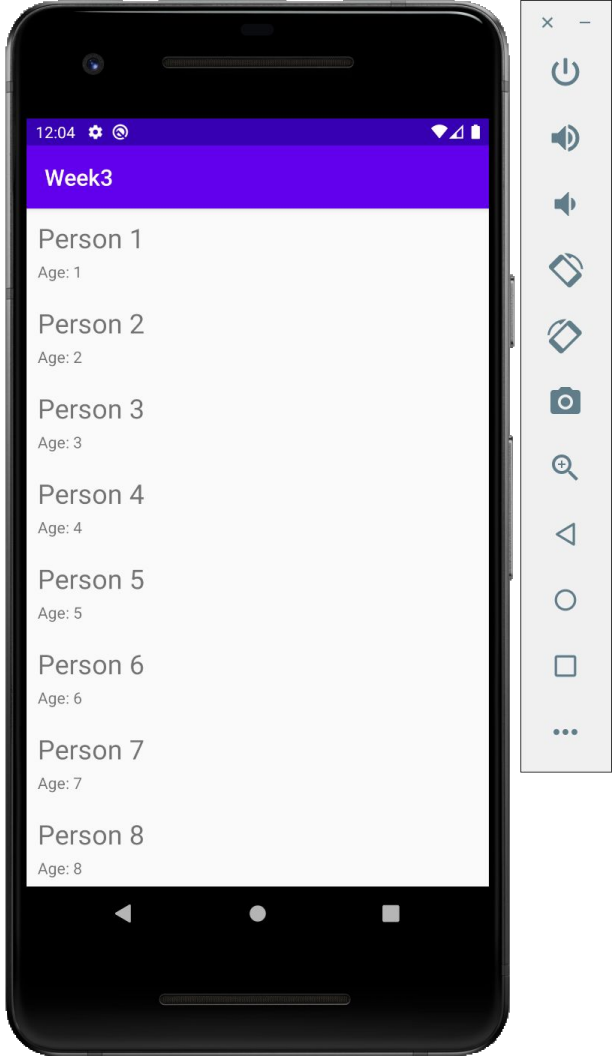
RecyclerView Components




Scrap View
2
Edinburgh station
1
Gates of Versailles
Visible
Screen
Edinburgh Castle
6
Scroll
Direction
Recycle Views
3
Dirty
View
Binding
4
5
Scott Monument
View going on-screen


12:04
Week3
Person 1
Age: 1
Person 2
Age: 2
Person 3
Age: 3
Person 4
Age: 4
Person 5
Age: 5
Person 6
Age: 6
Person 7
Age: 7
Person 8
Age: 8

Breakout rooms

What are the main benefits of RecyclerView compared to ListView?

sample interview question!

RecyclerView vs ListView

- (+) More efficient by default (use the ViewHolder pattern)
- (+) More flexible for styling + animations
- (+) Separation of concerns
- (-) More complicated

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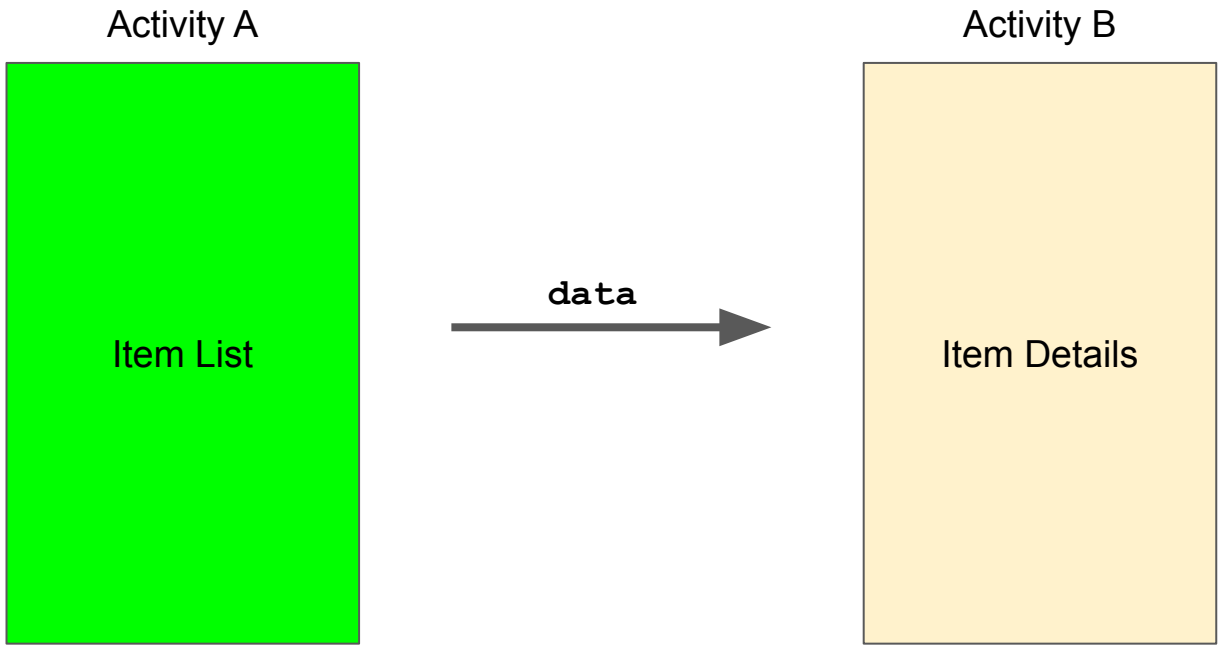
Intents

- Android system for communicating between different components
- A request given to:
  - Your own application
  - An external application
  - A built-in Android service

Multiple activities (or screens)



Use cases

- Email list → detail view
- Tweet list → single tweet
- Data params can be passed to the child activity
- Data can also be returned to the parent activity

Use Android Studio to create new activities

- Creates a new XML layout file for the UI
- Creates a Kotlin file for the business logic
- Adds the activity to the AndroidManifest.xml file so your app is aware of it:

```
<application>

    ....

    <activity android:name=".AddContactActivity"></activity>

</application>
```

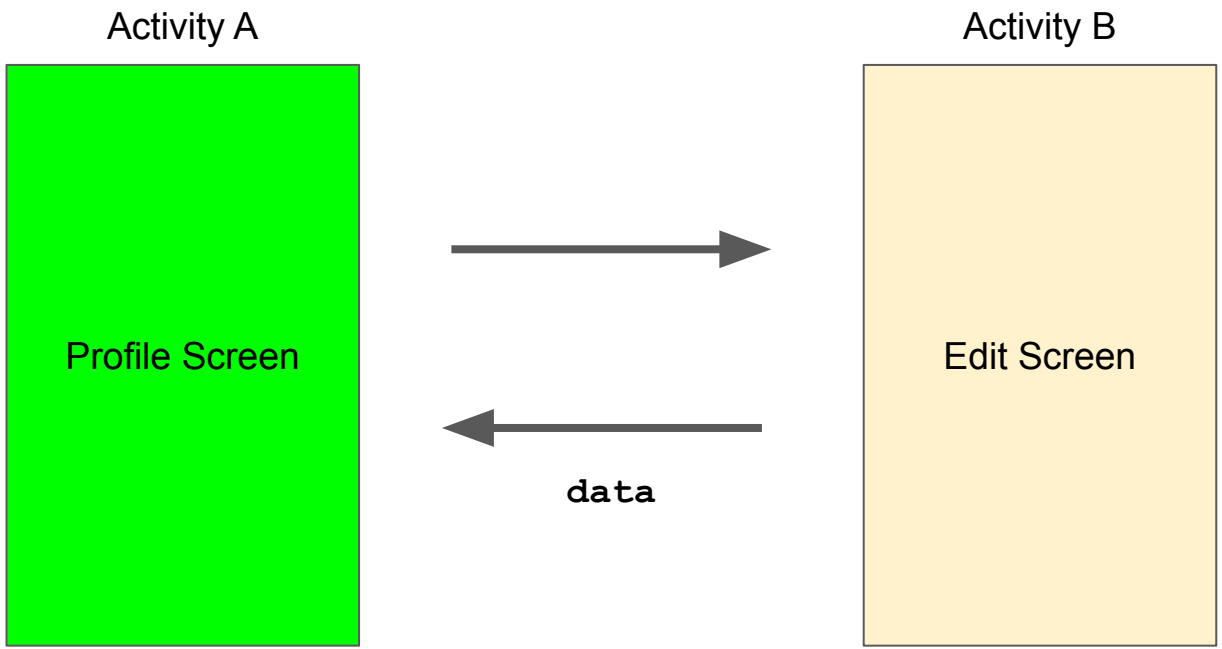
Create an intent

- Navigate to the newly created Activity (usually in response to an event)
  - `val myIntent = Intent(this, ActivityName::class.java)`
  - `startActivity(myIntent)`
- If you want to pass data into the 2nd activity, call putExtra on the intent. Think of it like a map.
  - `val myIntent = Intent(this, ActivityName::class.java)`
  - `myIntent.putExtra("tweet_id", 1234)`
  - `myIntent.putExtra("username", "rpandey1234")`
  - `startActivity(myIntent)`

Types of Intents

- Explicit intent: launch other activities in your app
  - `val myIntent = Intent(this, ActivityName::class.java)`
  - `startActivity(myIntent)`
- Implicit intent: request to perform an action based on a desired action
  - `val browserIntent = Intent(Intent.ACTION_VIEW, Uri.parse("url.com"))`
  - `startActivity(browserIntent)`
  - Common implicit intents: start a phone call, take a picture, open the browser/maps

Returning data to the parent



Getting a result back from a launched activity

- Sometimes you'll want to get data from the launched activity
  - `ProfileActivity` launched `EditActivity`: user edited their profile
  - Intent to take a picture
- Call `startActivityForResult` rather than `startActivity`.
  - Pass a request code along with the intent
  - Returns immediately, but the Android system will call another method...
- `onActivityResult` is called when the second activity is done
  - Second activity should call `setResult` and `finish` to communicate back

Prep for next week

- Start working on **My Maps**

- Optional: integrating the camera in your app (video)