

CMPS 312

Read Chapter 1 & 6



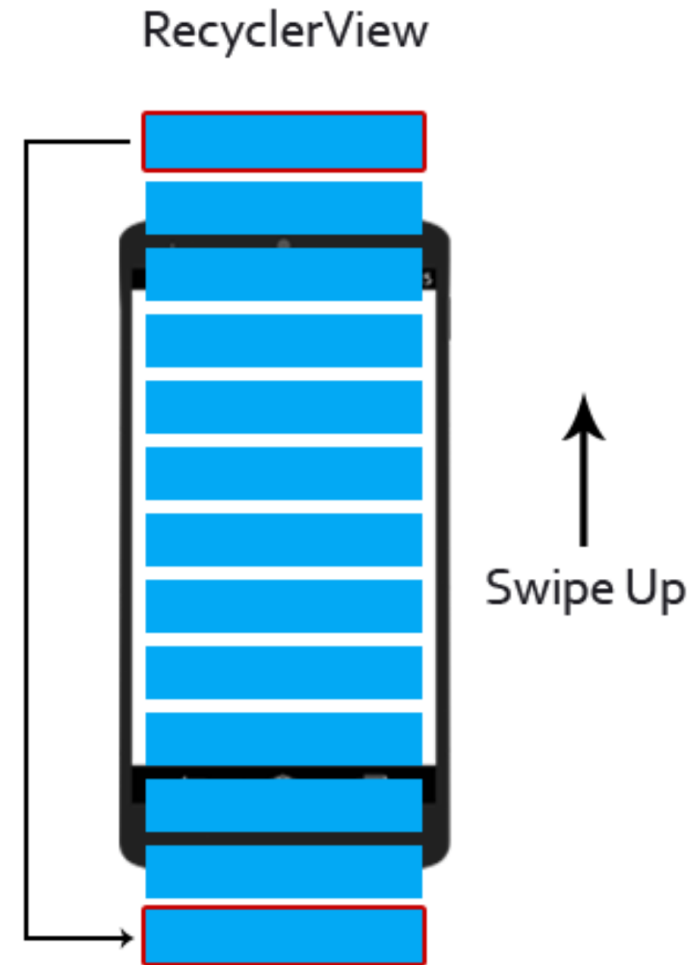
RecyclerView

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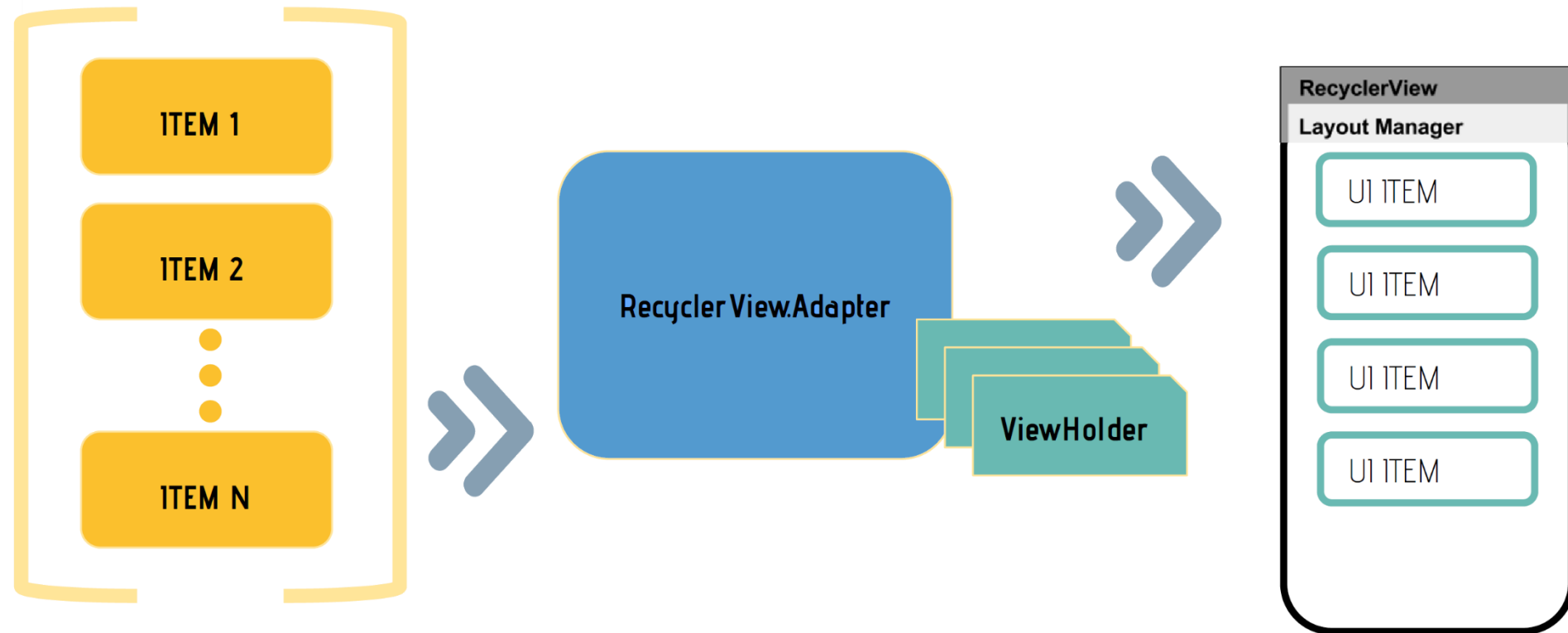
RecyclerView

What is a RecyclerView?

- RecyclerView is scrollable container for displaying a list of views
- A flexible container for efficiently displaying, and interacting with large sets of data
 - As user scrolls, views leave the screen and are recycled and reused to display new items
 - Efficient as it reuses a limited number of views



RecyclerView Key Elements



Implementation Steps Summary

- Add **RecyclerView** to the layout
- Create list item XML layout to specify how individual items should be displayed
- Implement **RecyclerViewAdapter** that extends **RecyclerView.Adapter**
 - Connects data (i.e., a list of objects) to the **RecyclerView**
- Implement **ViewHolder** that extends **RecyclerView.ViewHolder**
 - Holds the inflated view to be used to display individual items
- In **Activity onCreate**, set the **RecyclerView** adapter and the **LayoutManager**
 - **LayoutManager** Controls how individual views are laid out on the screen

Add RecyclerView to XML Layout

```
<androidx.recyclerview.widget.RecyclerView  
    android:id="@+id/countriesRecyclerView"  
>
```

Create list item XML layout

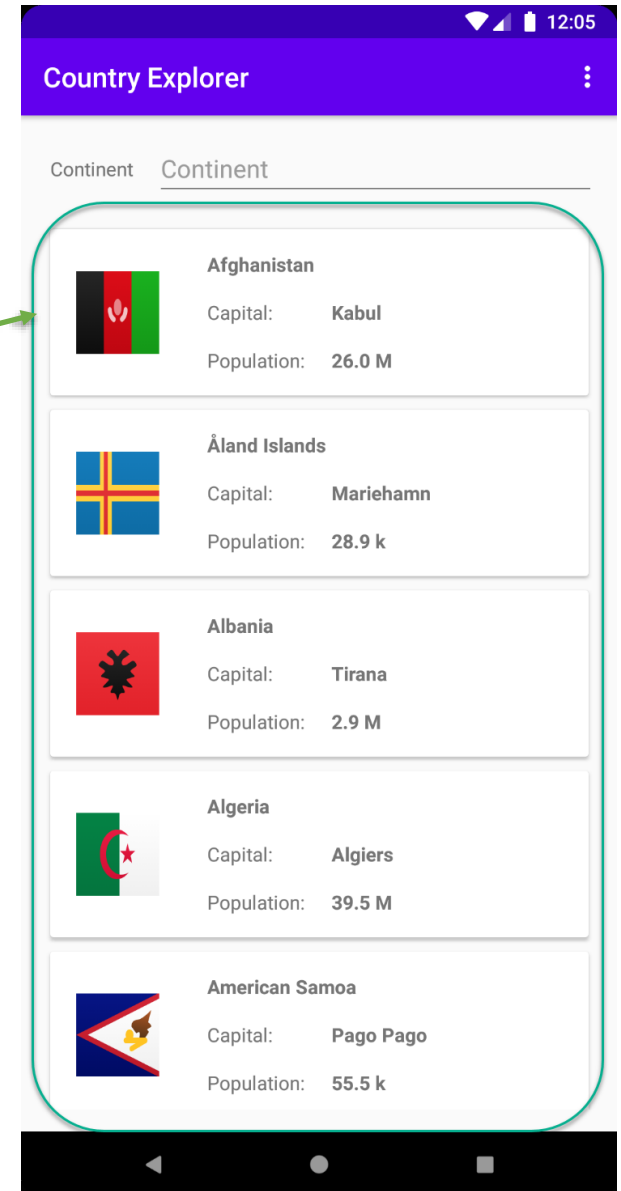
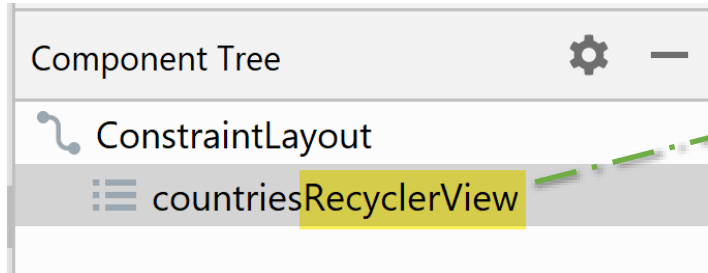
```
<LinearLayout ...>  
    <TextView  
        android:id="@+id/word" ... />  
</LinearLayout>
```

Implement RecyclerViewAdapter having 3 required methods

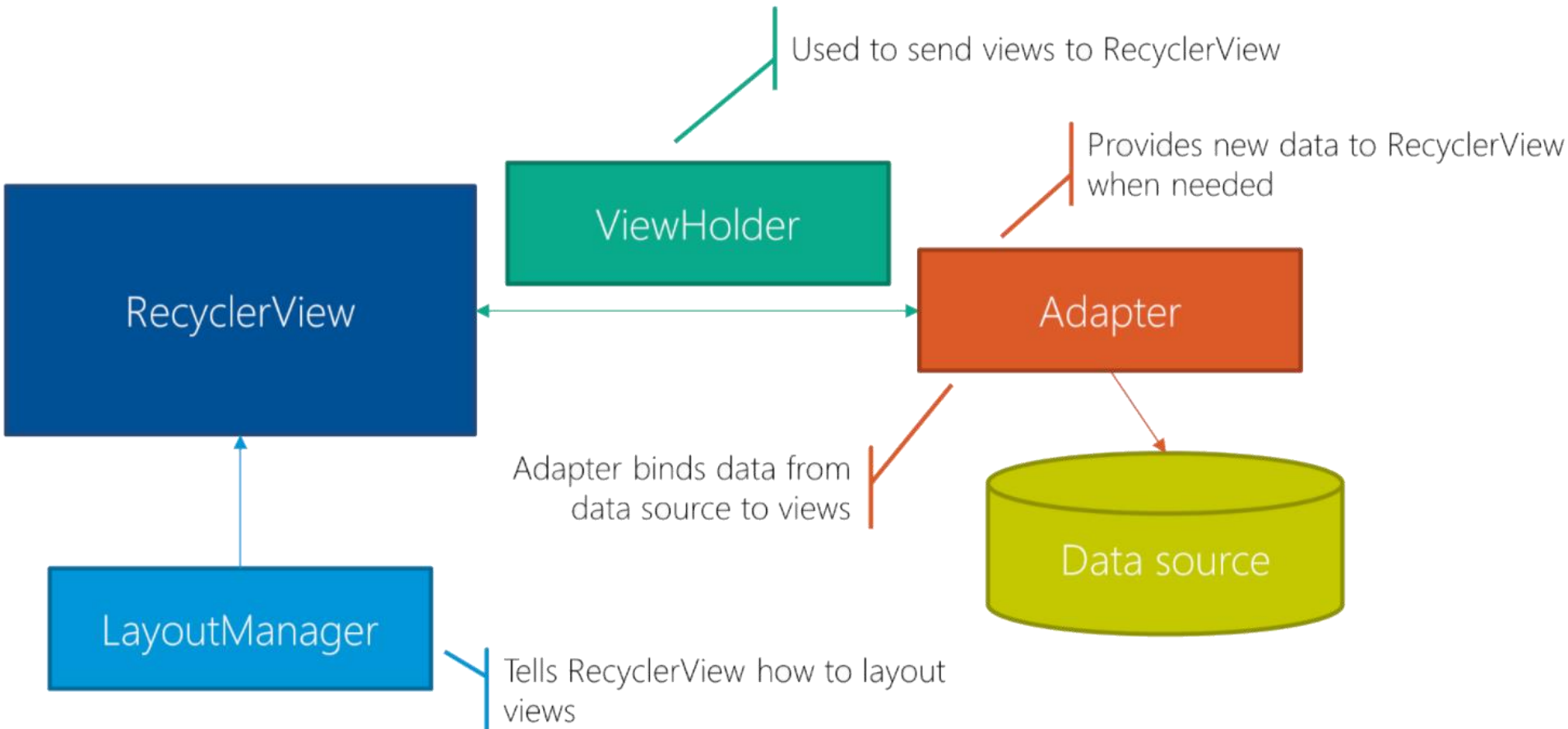
- **onCreateViewHolder()**
- **onBindViewHolder()**
- **getItemCount()**

Let's take a look!

Country Explorer App



RecyclerView Flow



What is a layout manager?

- Use to position View items inside a [RecyclerView](#)
- Reuses View items that are no longer visible to the user
- Built-in layout managers
 - [LinearLayoutManager](#): Lays items out vertically or horizontally
 - [GridLayoutManager](#): Lays items out in a grid

What is an adapter?

- Helps incompatible interfaces work together
- Intermediary between data and View
- Manages creating, updating, adding, deleting View items as underlying data changes
- Extends [RecyclerView.Adapter](#)

What is a ViewHolder?

- Used by the adapter to prepare one View with data for one list item
- Layout specified in an XML resource file
- Can have clickable elements
- Is placed by the layout manager
- Extends [RecyclerView.ViewHolder](#)