

CMPS 312

Read Chapter 1 & 6

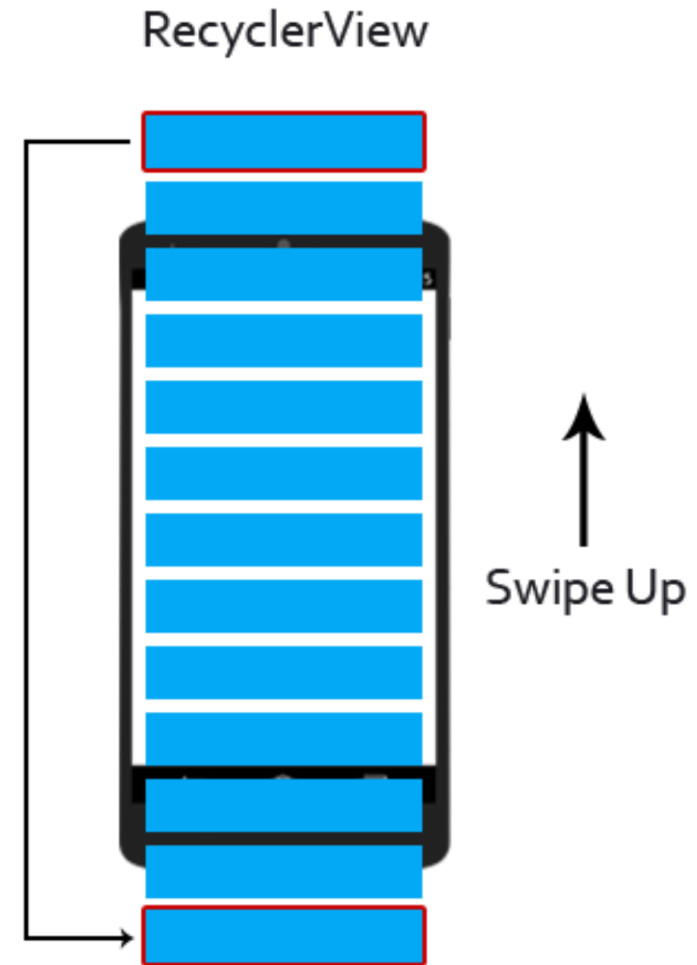


RecyclerView

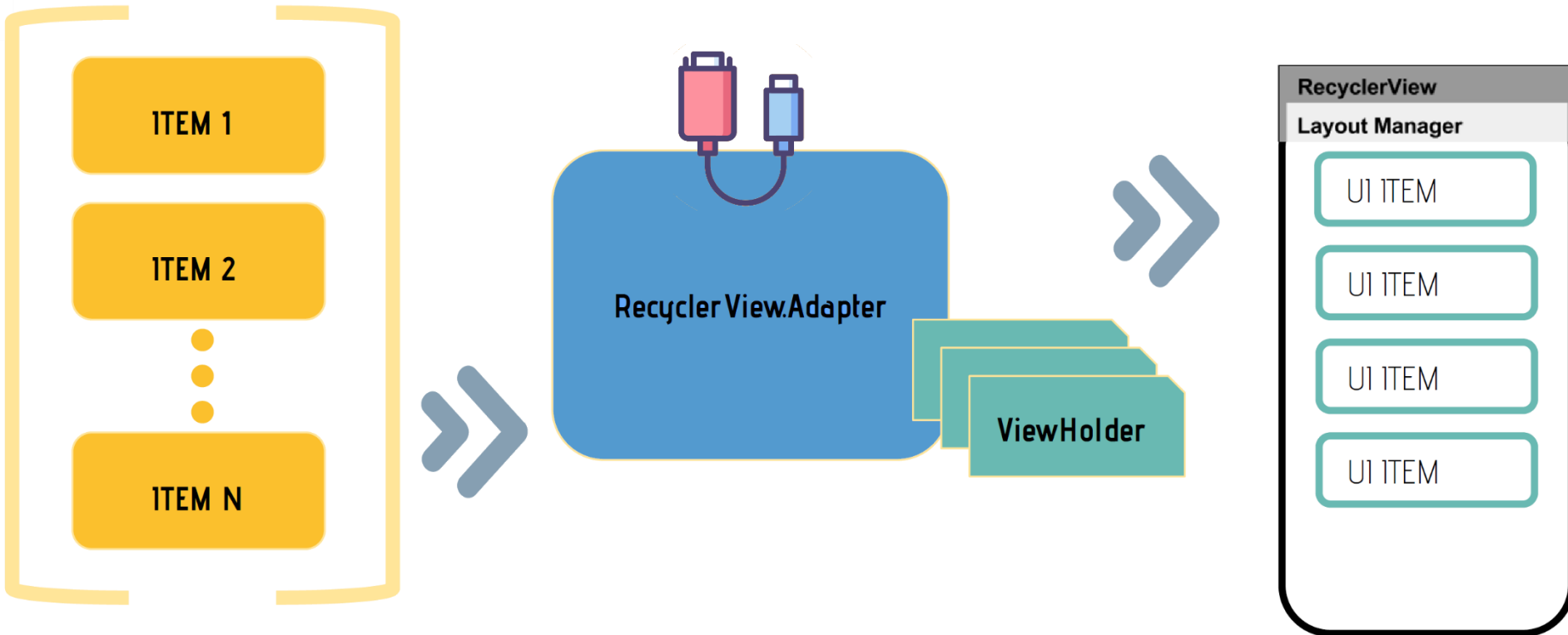
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What is a RecyclerView?

- 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 that leave the screen are recycled and reused to display new items
 - Efficient as it reuses a limited number of views



RecyclerView Key Elements



- **Adapter:** connects the *RecyclerView* to the data source
- **ViewHolder:** displays the data in the list item view

What is RecyclerView Adapter?

- In general an adapters helps incompatible interfaces work together
- RecyclerView connects the RecyclerView to the data source
- It extends [RecyclerView.Adapter](#) and implements:

RecyclerView Adapter

1. Return the number of items
`getItemCount()`

2. Create new view instances
`onCreateViewHolder()`

3. Populate view items with data
`onBindViewHolder()`

What is a ViewHolder?

- It holds the view created from the list item XML Layout
- Used by the adapter to prepare a View with data for one list item
 - It assigns / updates the data in the view items. When a view is re-used, the previous data is overwritten.
- Can have clickable elements
- Is placed in the RecyclerView by the layout manager
- Extends [RecyclerView.ViewHolder](#)

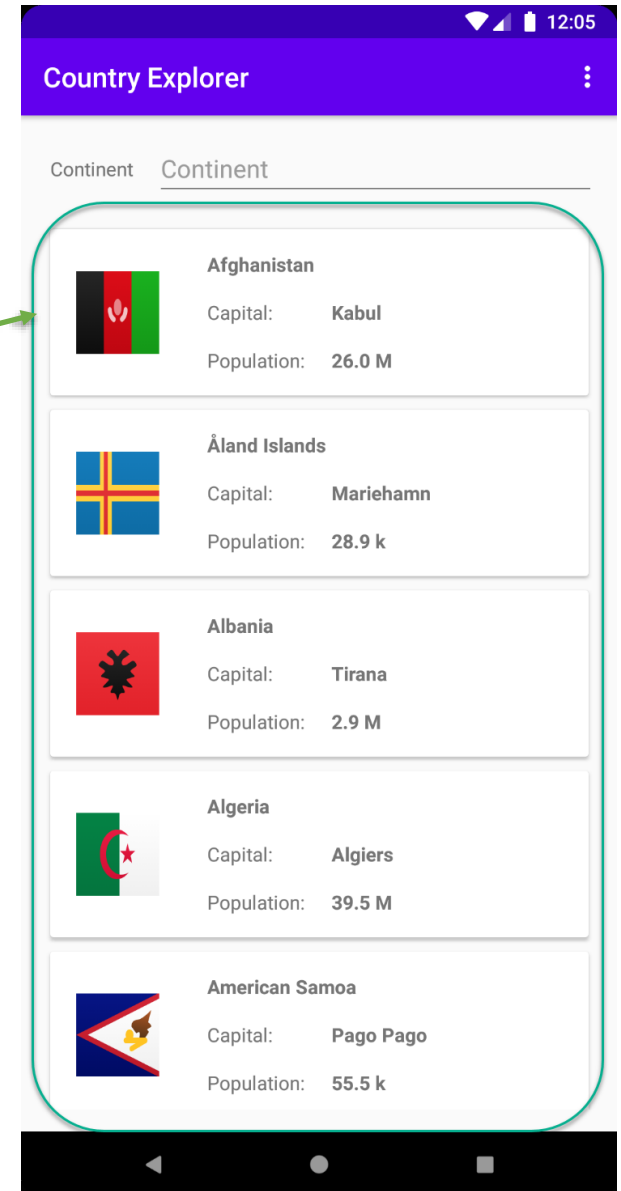
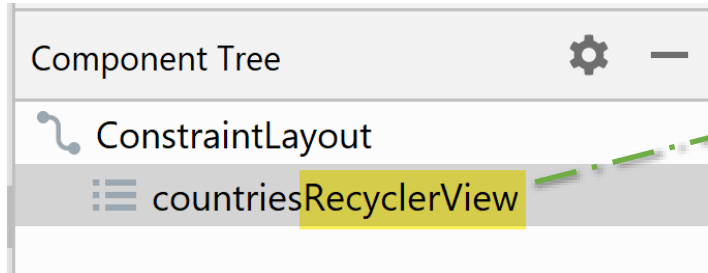
What is a layout manager?

- Used 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

Implementation Steps Summary

- Add **RecyclerView** to the layout
- Create **list item XML layout** to specify how individual items should be displayed
- Implement **RecyclerView Adapter** 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

Country Explorer App



RecyclerView Summary

