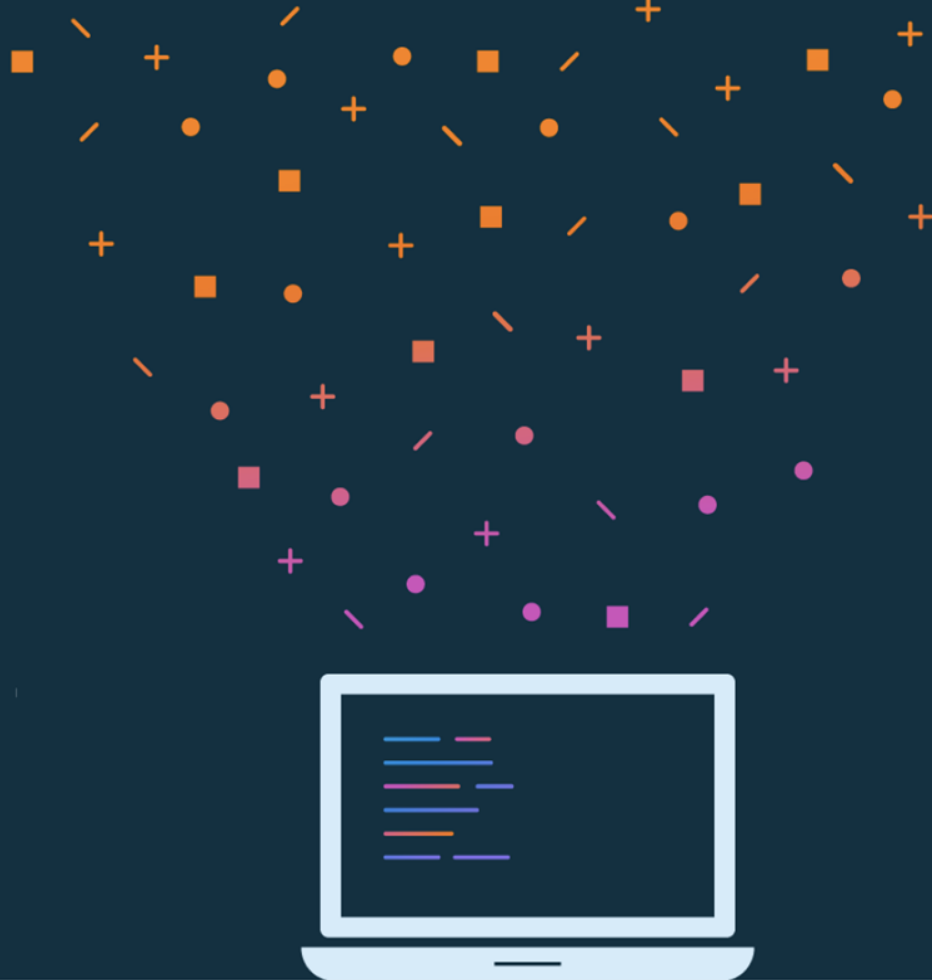




# Lesson 5: Layouts



# About this lesson

## Lesson 5: Layouts

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# Displaying lists with RecyclerView

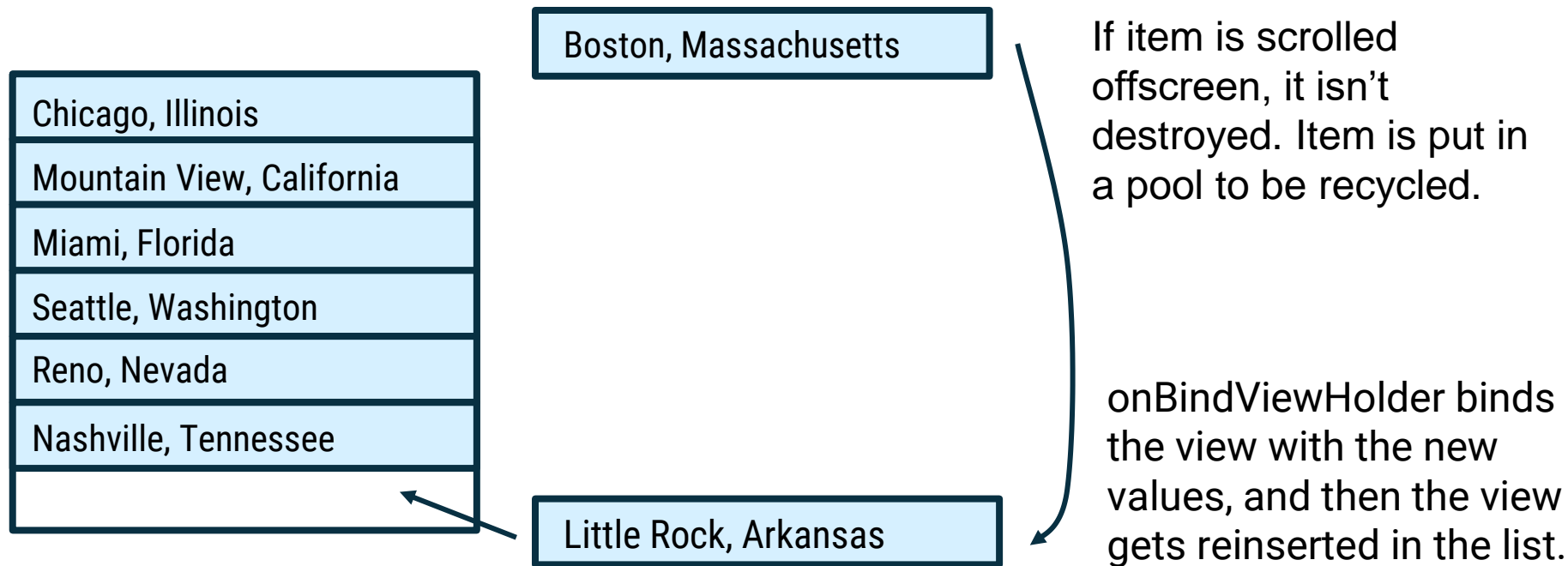
# RecyclerView

- Widget for displaying lists of data
- "Recycles" (reuses) item views to make scrolling more performant
- Can specify a list item layout for each item in the dataset
- Supports animations and transitions

# RecyclerView.Adapter

- Supplies data and layouts that the RecyclerView displays
- A custom Adapter extends from `RecyclerView.Adapter` and overrides these three functions:
  - `getItemCount`
  - `onCreateViewHolder`
  - `onBindViewHolder`

# View recycling in RecyclerView



# Add RecyclerView to your layout

```
<androidx.recyclerview.widget.RecyclerView  
    android:id="@+id/rv"  
    android:scrollbars="vertical"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent"/>
```

# Create a list item layout

res/layout/item\_view.xml

```
<FrameLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content">
    <TextView
        android:id="@+id/number"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />
</FrameLayout>
```



# Create a list adapter

```
class MyAdapter(val data: List<Int>) : RecyclerView.Adapter<MyAdapter.MyViewHolder>()
{
    class MyViewHolder(val row: View) : RecyclerView.ViewHolder(row) {
        val textView = row.findViewById<TextView>(R.id.number)
    }

    override fun onCreateViewHolder(parent: ViewGroup, viewType: Int): MyViewHolder {
        val layout = LayoutInflater.from(parent.context).inflate(R.layout.item_view,
            parent, false)
        return MyViewHolder(layout)
    }
    override fun onBindViewHolder(holder: MyViewHolder, position: Int) {
        holder.textView.text = data.get(position).toString()
    }
    override fun getItemCount(): Int = data.size
}
```

# Set the adapter on the RecyclerView

In MainActivity.kt:

```
override fun onCreate(savedInstanceState: Bundle?) {  
    super.onCreate(savedInstanceState)  
    setContentView(R.layout.activity_main)  
  
    val rv: RecyclerView = findViewById(R.id.rv)  
    rv.layoutManager = LinearLayoutManager(this)  
  
    rv.adapter = MyAdapter(IntRange(0, 100).toList())  
}
```

# Summary

# Summary

In Lesson 5, you learned how to:

- Display a list of text items using a RecyclerView and custom adapter

# Learn more

- [Create dynamic lists with RecyclerView](#)

# Pathway

Practice what you've learned by completing the pathway:

[Lesson 5: Layouts](#)

