Fragment ?

What is a Fragment?

View 1

Activity 1

View 2

View 3

Activity 2

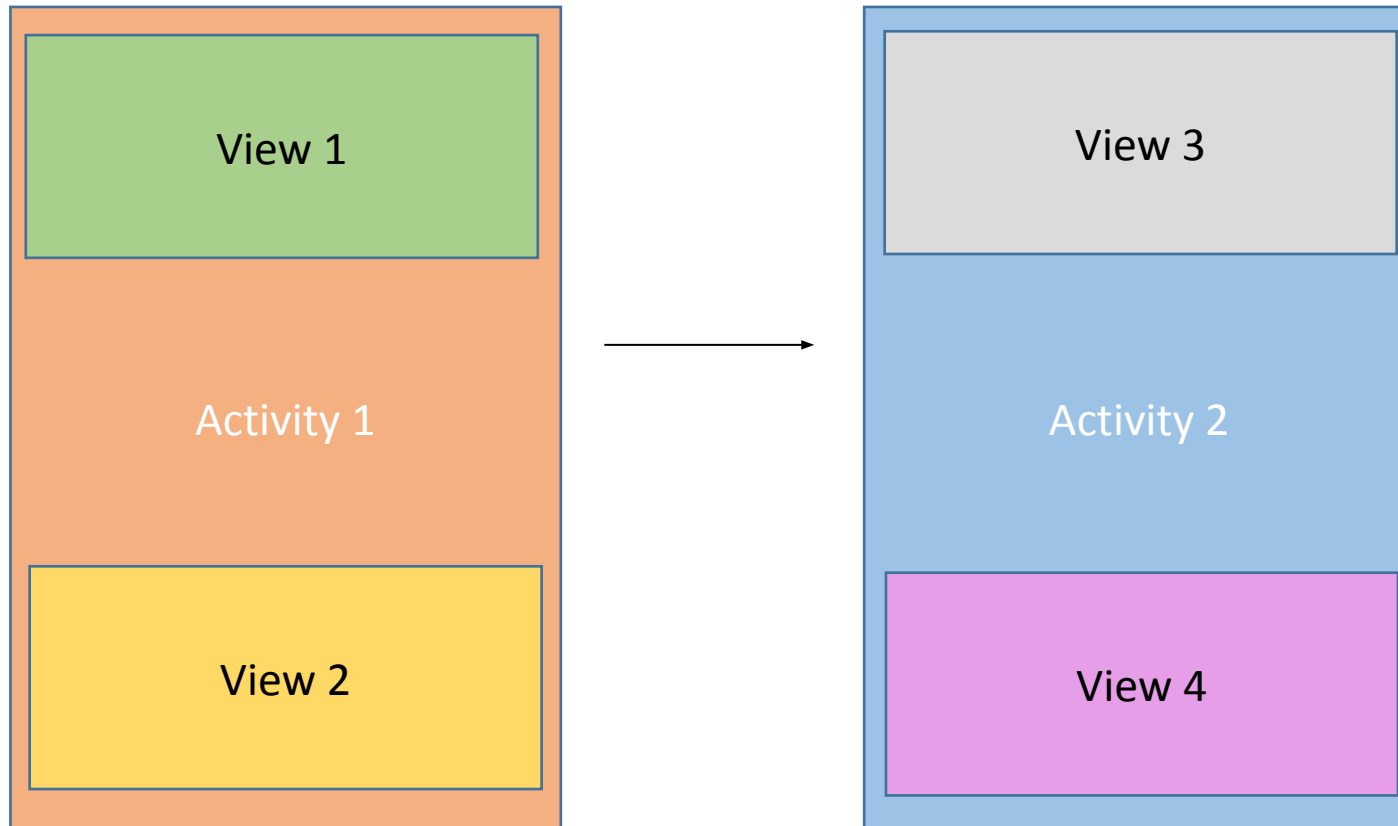View 4

Before android 3.0 , If you have to show View 3 and View 4 you have to create new activity
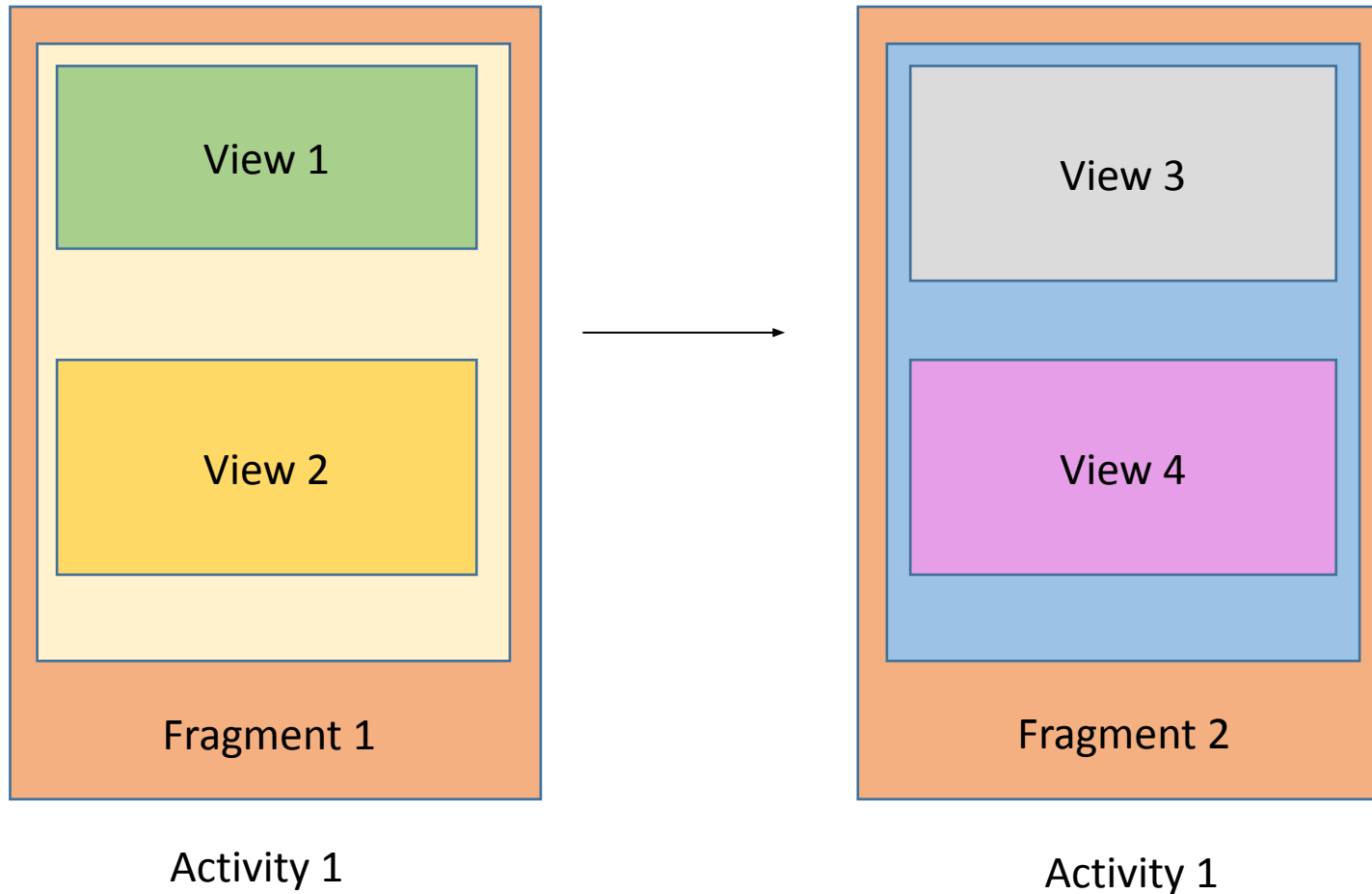
Fragments

- A Fragment represents a behaviour or a **portion of user interface** in a FragmentActivity. You can combine <u>multiple fragments in a single activity</u> to build a multi-pane UI and <u>reuse a fragment</u> in multiple activities.

- You can think of a fragment as a **modular section** of an activity, which has its <u>own lifecycle</u>, receives its **own input events**, and which you can add or remove while the activity is running.

- A fragment must always be <u>hosted in an activity</u> and the fragment's lifecycle is directly affected by the host activity's lifecycle.

Fragments

- For example, when the activity is paused, so are all fragments in it, and when the activity is destroyed, so are all fragments.

- When you perform such a fragment transaction, you can also add it to a **back stack** that's managed by the activity—each back stack entry in the activity is a record of the fragment transaction that occurred.

  - The back stack allows the user to **reverse a fragment transaction** (navigate backwards), by pressing the *Back* button.

What is a Fragment?

View 1

View 2

Fragment 1
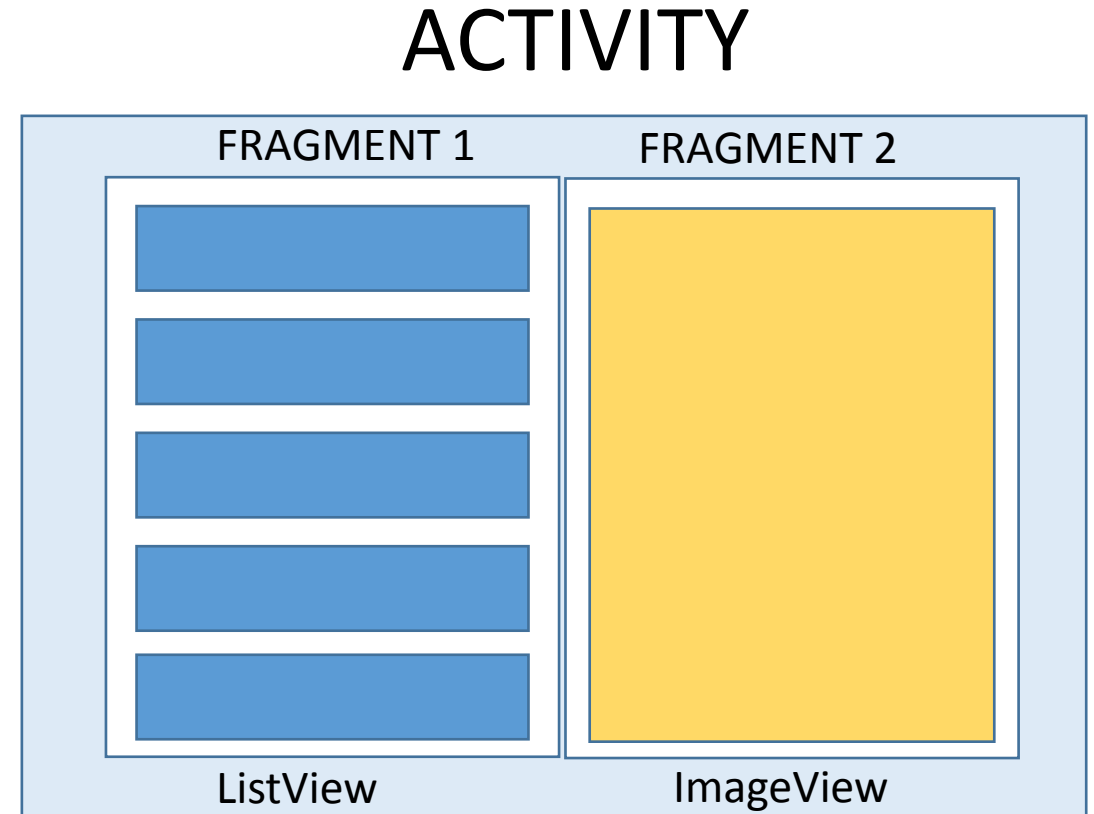
Activity 1

View 3

View 4

Fragment 2

Activity 1

Now, just insert fragment or delete it and insert another fragment.

Fragments are so much customizable.

What is a Fragment?

- Fragment is a chunk of UI.
- It has its own Lifecycle.
- It can process its own events
- It can be added or removed while the Activity runs.
- It was introduced in Honeycomb API 11.
- You can use Fragments on older devices using a Support Library from 1.6 to 2.3

ACTIVITY

FRAGMENT 1	FRAGMENT 2
ListView	ImageView

Why do you need Fragments ?

- Combine Several Fragments in One Activity

- Reuse the same Fragment across several Activity

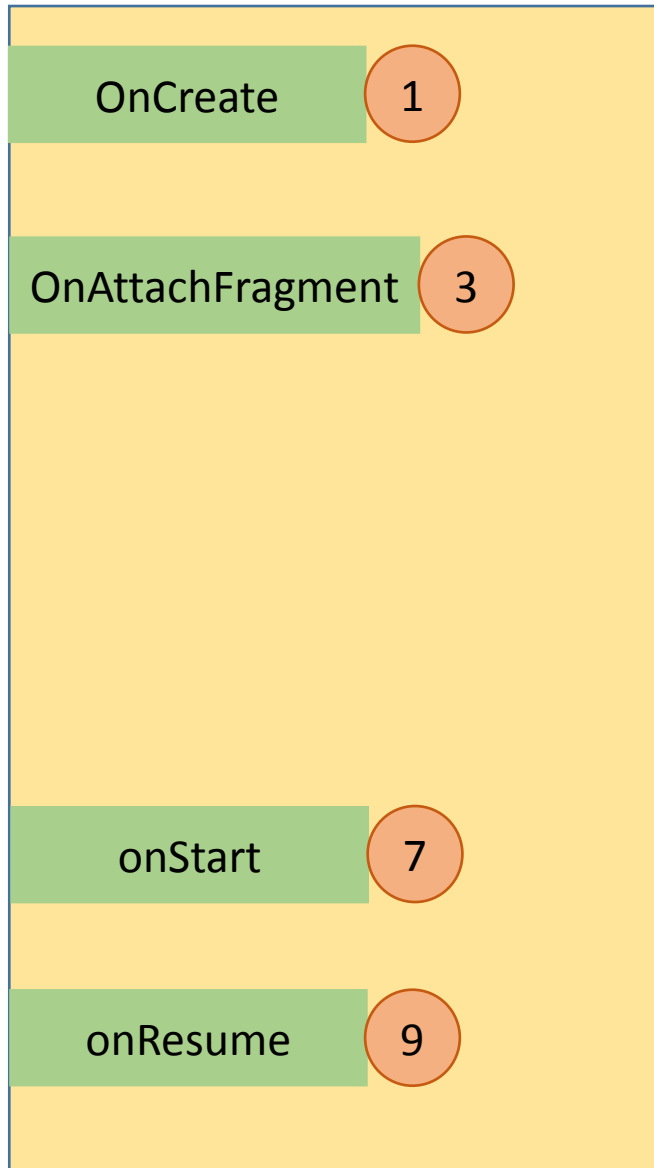- Make better use of larger screen space on tablets

Uses of Fragments?

- Flexible user interfaces across different screen sizes

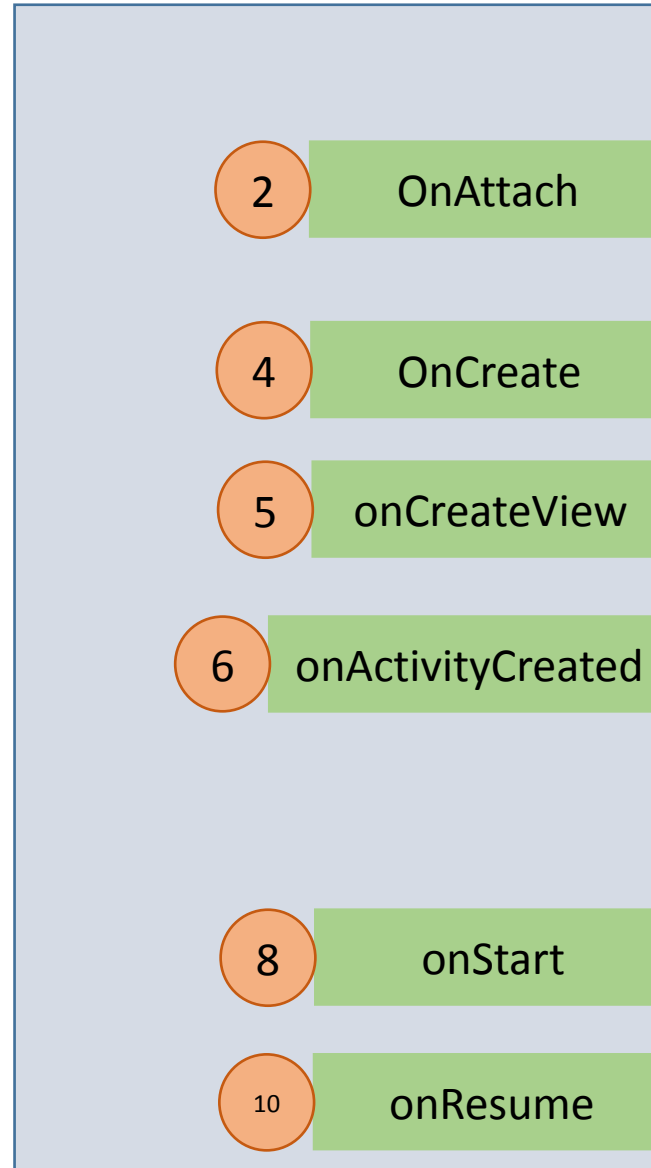- Fixed/Scrolling/Swipe tab displays

- Dialog boxes

How to make a Fragment ?

- Extend Fragment class

- Provide apperarance in XML/Java

- Override onCreateView to link the appearance.

- Use the Fragment in XML/Java(Dynamically).

Activity

OnCreate	1
OnAttachFragment	3
onStart	7
onResume	9

Fragment

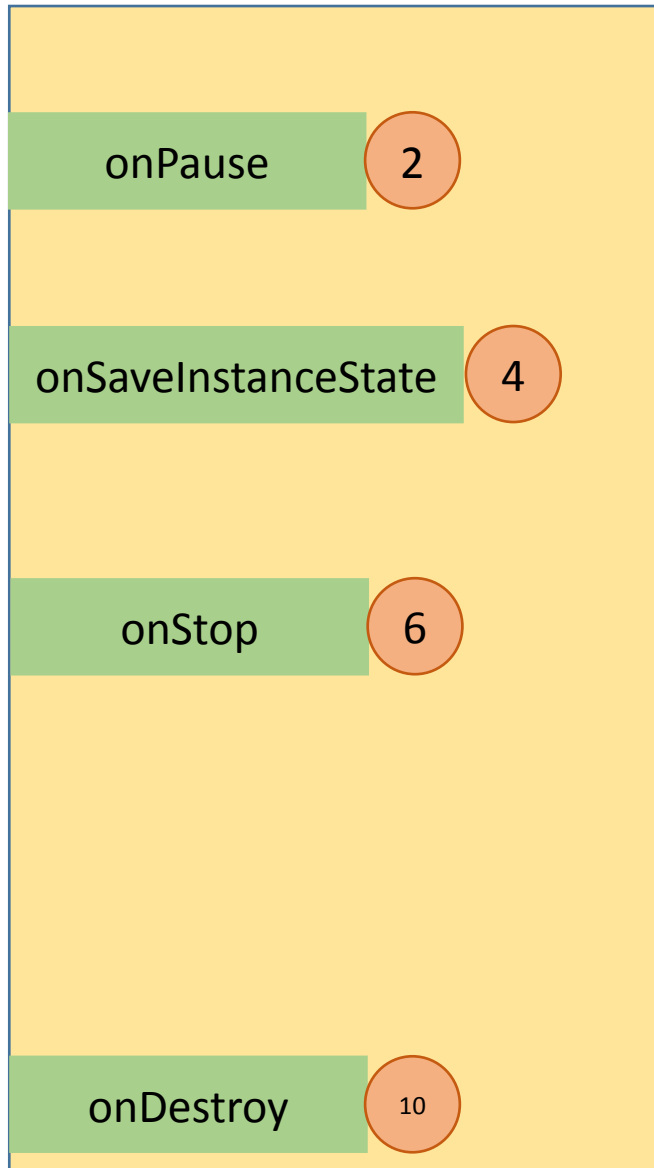|	
2	OnAttach
4	OnCreate
5	onCreateView
6	onActivityCreated
8	onStart
10	onResume

onAttach is called after Fragment is associated with its Activity Gets a reference to the Activity object which can be used as Context.

onCreate. The system calls this when creating the fragment. You should **initialize** essential components of the fragment that you want to retain when the fragment is paused or stopped, then resumed.

onCreateView. You are expected to return a View Hierarchy for your fragment

onActivityCreated Called after Activity onCreate has completed execution Use this method to access/modify UI elements.

Activity

onPause ②

onSaveInstanceState ④

onStop ⑥

onDestroy ⑩

Fragment

① **onPause**

③ **onSaveInstanceState**

⑤ **onStop**

⑦ **onDestroyView**

⑧ **onDestroy**

⑨ **onDetach**

onSaveInstanceState Use this to save information inside a Bundle object.

onDestroyView Called after the Fragment View Hierarchy is no longer accessible

onDestroy Called after fragment is not used. It still exists as a java object attached to the Activity
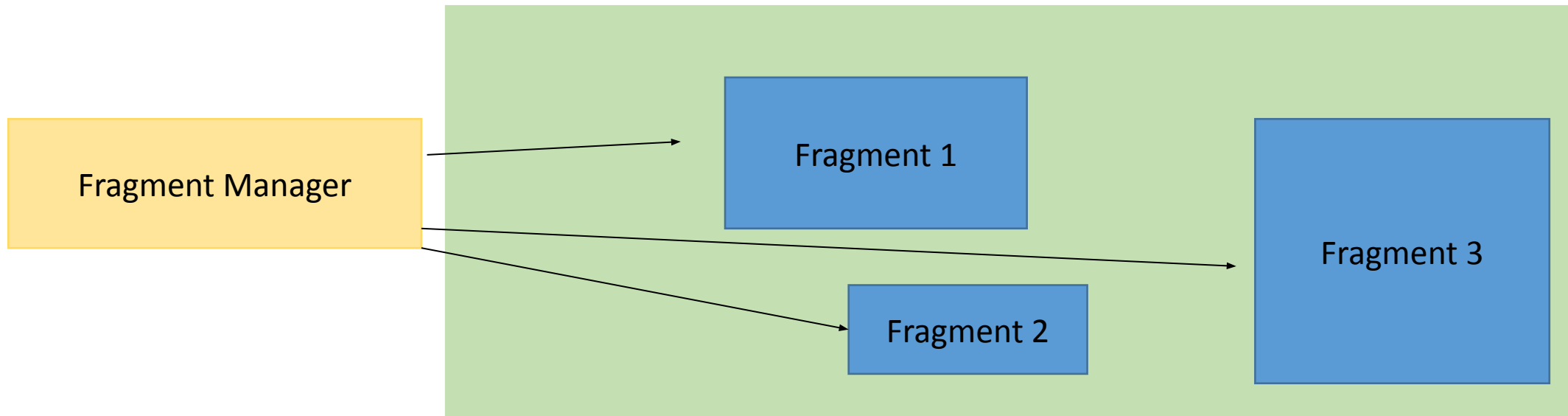
onDetach Fragment is not tied to the Activity and does not have a View hierarchy

The Fragment Manager

Every Activity has its own Fragment Manager
Accessible through **getFragmentManager()**

It maintains references to all fragments inside the Activity

Use **findFragmentById()** or **findFragmentByTag()** to get reference to a particular Fragment.

Fragment Transactions

Fragement
Manager

Changes to the UI in terms of adding,
Removing and replacing Fragments are
Conducted as **FragmentTransactions**

Begin a transaction

Add, remove, replace whatever fragments
you want

Commit the transaction

begin

commit

Fragement A