

Fragment

In Android, a `Fragment` is a modular and reusable component that represents a portion of a user interface or behavior within an activity. Fragments were introduced to support the development of flexible and responsive user interfaces, especially for larger screens like tablets. Fragments have their own lifecycle and can be combined to create multi-pane UIs.

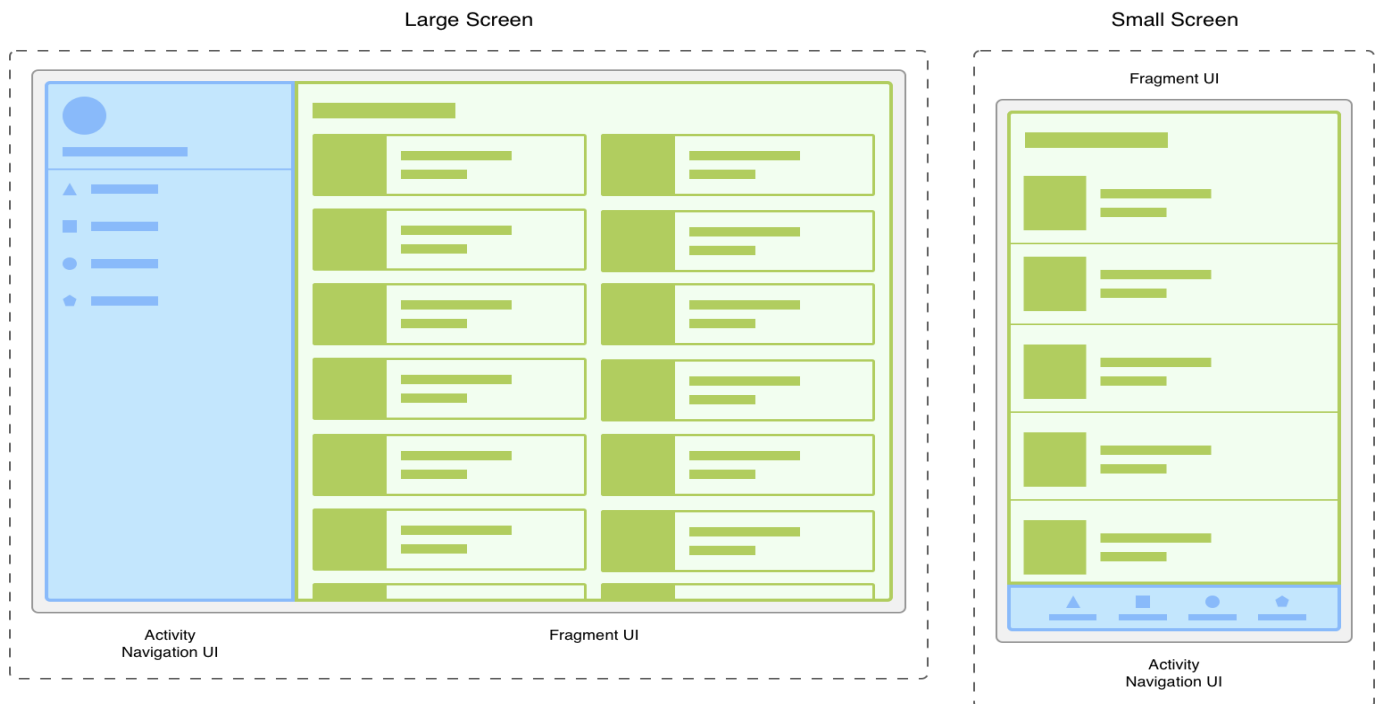
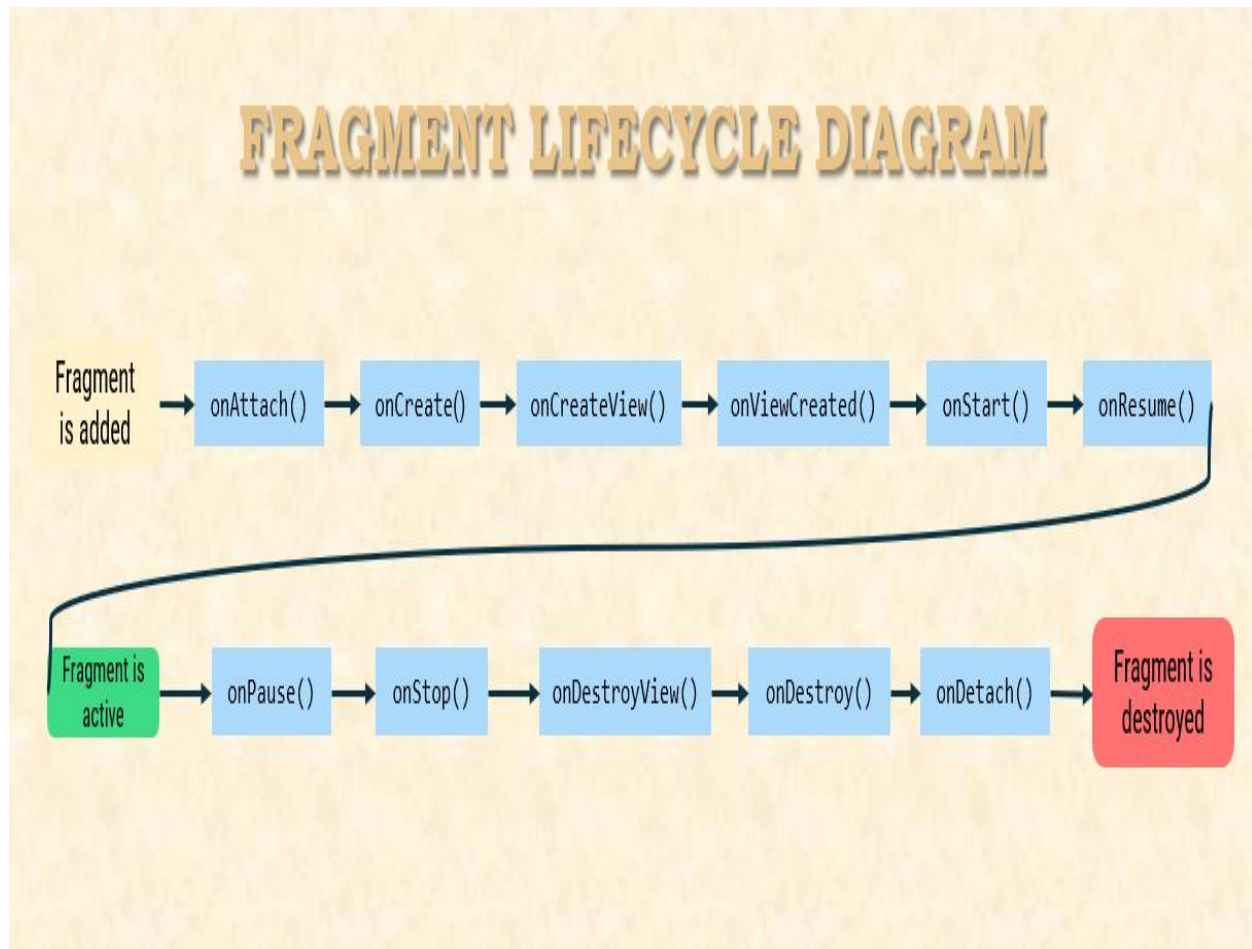


Figure 1. Two versions of the same screen on different screen sizes. On the left, a large screen contains a navigation drawer that is controlled by the activity and a grid list that is controlled by the fragment. On the right, a small screen contains a bottom navigation bar that is controlled by the activity and a linear list that is controlled by the fragment.

Dividing your UI into fragments makes it easier to modify your activity's appearance at runtime. While your activity is in the `STARTED` lifecycle state or higher, fragments can be added, replaced, or removed. And you can keep a record of these changes in a back stack that is managed by the activity, so that the changes can be reversed.

Fragment Lifecycle:



Fragments have their own lifecycle methods, similar to activities. Some of the key lifecycle methods include:

1) onAttach():

Called when the fragment has been associated with the activity.

2) onCreate():

Called to do initial creation of the fragment.

3) onCreateView():

Called to create the UI for the fragment.

4) onActivityCreated():

Called when the activity's `onCreate` method has returned.

5) onStart():

Called when the fragment becomes visible to the user.

6) onResume():

Called when the fragment is visible and actively running.

7) onPause():

Called when the fragment is no longer interacting with the user.

8) onStop():

Called when the fragment is no longer visible to the user.

9) onDestroyView():

Called when the view hierarchy associated with the fragment is being removed.

10) onDestroy():

Called when the fragment is no longer in use.

11) onDetach():

Called when the fragment is no longer associated with the activity.

State	Callbacks	Description
Initialized	onAttach()	Fragment is attached to host.
Created	onCreate(), onCreateView(), onViewCreated()	Fragment is created and layout is being initialized.
Started	onStart()	Fragment is started and visible.
Resumed	onResume()	Fragment has input focus.
Paused	onPause()	Fragment no longer has input focus.
Stopped	onStop()	Fragment is not visible.
Destroyed	onDestroyView(), onDestroy(), onDetach()	Fragment is removed from host.

