

What is Fragment ?

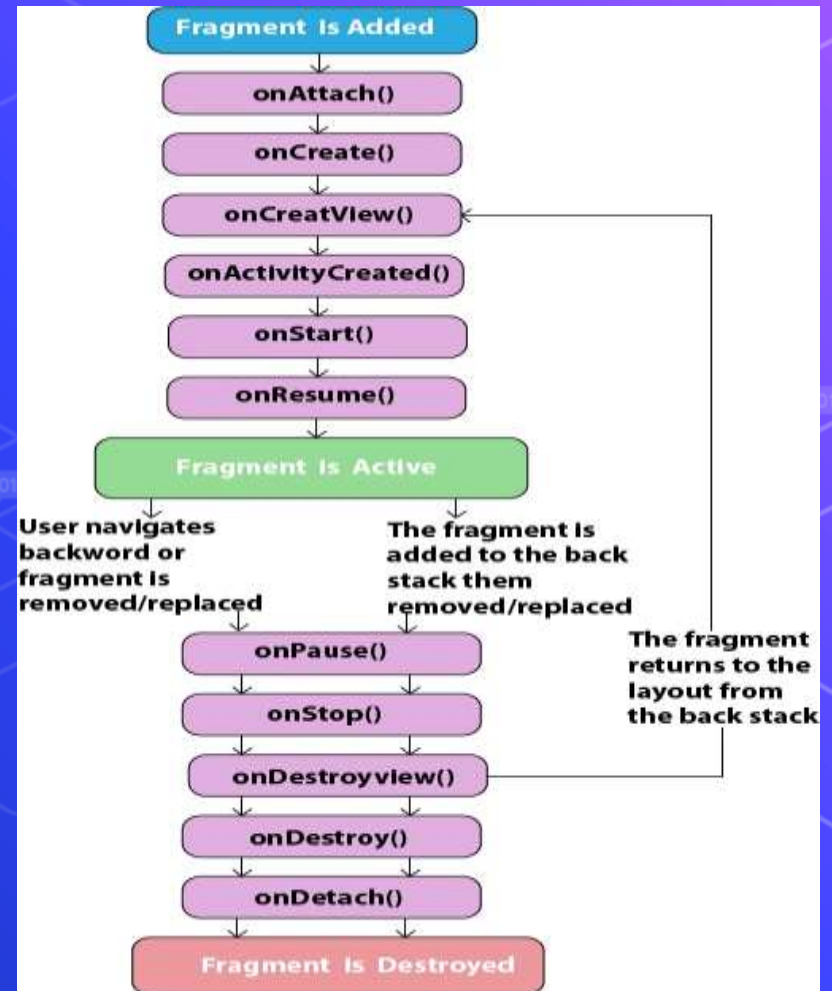


In Android, Fragment is a part of an activity which enable more modular activity design. It will not be wrong if we say a fragment is a kind of sub-activity. It represents a behavior or a portion of user interface in an Activity. We can combine multiple Fragments in Single Activity to build a multi panel UI and reuse a Fragment in multiple Activities. We always need to embed Fragment in an activity and the fragment lifecycle is directly affected by the host activity's lifecycle.

Important points about fragment

- ⬡ A fragment has its own layout and its own behavior with its own life cycle callbacks.
- ⬡ Fragments can add or remove in an activity while the activity is running.
- ⬡ Multiple fragments can use in a single activity
- ⬡ A fragment can be used in multiple activities.
- ⬡ Fragment life cycle is closely related to the life cycle of its host activity which means when the activity is paused, all the fragments available in the activity will also be stopped.

Fragment Lifecycle



onAttach: it is called only once when it is attached with activity.

OnCreate: It is used to initialize the fragment

onCreateView :creates and returns view hierarchy.

onActivityCreated :It is invoked after the completion of onCreate() method.

onViewStateRestored: It provides information to the fragment that all the saved state of fragment view hierarchy has been restored.

OnStart : makes the fragment visible.

onResume : makes the fragment interactive.

OnPause : is called when fragment is no longer interactive.

OnStop :is called when fragment is no longer visible.

onDestroyView : allows the fragment to clean up resources.

onDestroy : allows the fragment to do final clean up of fragment state.

onDetach : It is called immediately prior to the fragment no longer being associated with its activity.

What is FragmentManager ?



Important available methods in Fragment Manager

addOnBackStackChangeListener: Add a new listener for changes to the fragment back stack.

beginTransaction(): Creates a new transaction to change fragments at runtime.

findFragmentById(int id): Finds a fragment by id usually inflated from activity XML layout

findFragmentByTag(String tag): Finds a fragment by tag usually for a runtime added fragment.

popBackStack(): Remove a fragment from the backstack.

executePendingTransactions(): Forces committed transactions to be applied.

Common `getSupportFragmentManager` Concepts

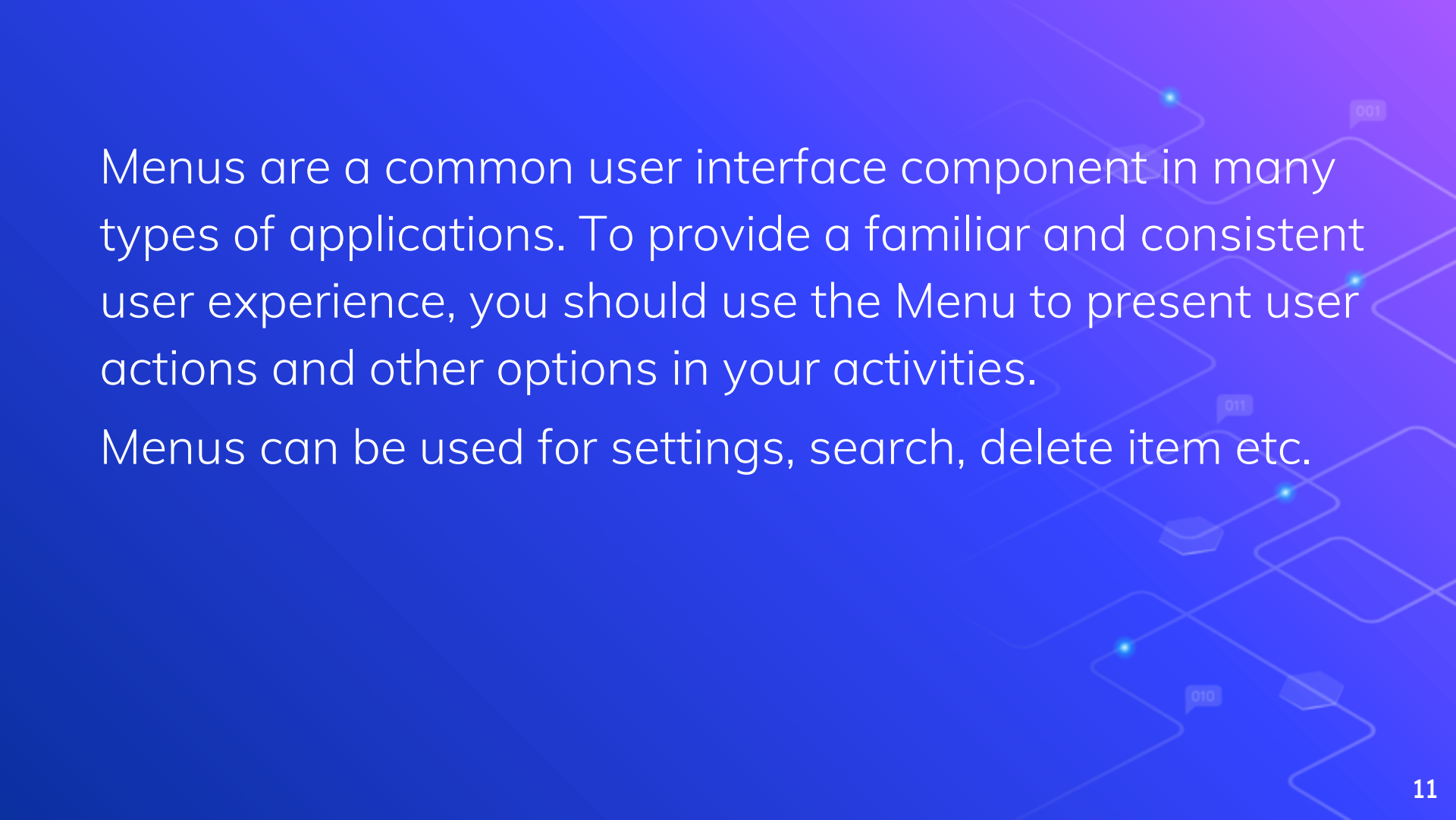
- ❖ **`getSupportFragmentManager`** : is associated with Activity consider it as a `FragmentManager` for your Activity .
- ❖ **`getChildFragmentManager`** : is associated with fragment.

Different between activity and Fragment

Activities	Fragment
Activity is an application component that gives a user interface where the user can interact.	The fragment is only part of an activity, it basically contributes its UI to that activity.
Activity is not dependent on fragment	Fragment is dependent on activity. It can't exist independently.
we need to mention all activity it in the manifest.xml file	Fragment is not required to mention in the manifest file
We can't create multi-screen UI without using fragment in an activity,	After using multiple fragments in a single activity, we can create a multi-screen UI.
The activity has its own life cycle.	Lifecycle methods in fragments are hosted by hosting the activity.
Activity can exist without a Fragment	Fragment cannot be used without an Activity.
Creating a project using only Activity then it's difficult to manage	While Using fragments in the project, the project structure will be good and we can handle it easily

What is Menu in Android ?



The background is a solid blue color with a subtle, abstract pattern of white lines and shapes. These include thin, curved lines that resemble circuit traces or data paths, and several small, light blue hexagonal shapes. Some of these hexagons are accompanied by small white speech bubble icons containing binary code (001, 011, 010).

Menus are a common user interface component in many types of applications. To provide a familiar and consistent user experience, you should use the Menu to present user actions and other options in your activities.

Menus can be used for settings, search, delete item etc.

Android Menu Types

In Android, there are three types of Menu available to define a set of options and actions in our android applications.

- ⬡ Android Options Menu
- ⬡ Android Context Menu
- ⬡ Android Popup Menu

Android Options Menu

Android Option Menus are the primary menus of android. They can be used for settings, search, delete item etc. When and how this item should appear as an action item in the app bar is decided by the Show Action attribute.

Android Context Menu

In android, Context Menu is like a floating menu and that appears when the user performs a long press or click on an element and it is useful to implement actions that affect the selected content or context frame.

The android Context Menu is more like the menu which displayed on right-click in Windows or Linux.

Android Popup Menu

Android Popup Menu displays a list of items in a vertical list which presents to the view that invoked the menu and useful to provide an overflow of actions that related to specific content.

Android Dialogs

A dialog is a small window that prompts the user to make a decision or enter additional information.

A dialog does not fill the screen and is normally used for modal events that require users to take an action before they can proceed.

Types Dialogs

In Android, there are three types of Menus available to define a set of options and actions in our android applications.

- ⬡ AlertDialog
- ⬡ DatePickerDialog /TimePickerDialog
- ⬡ Custom Dialog

AlertDialog

Android AlertDialog can be used to display the dialog message with OK and Cancel buttons. It can be used to interrupt and ask the user about his/her choice to continue or discontinue.

Android AlertDialog is composed of three regions: title, content area and action buttons.

Android AlertDialog is the subclass of Dialog class.

Thanks!

Any questions?

