**2. Fragment Lifecycle**

A **Fragment** is a modular UI component that exists inside an **Activity**. It has its own lifecycle but is **dependent on the hosting Activity**.

**Fragment Lifecycle Methods**

| **Method** | **Description** |
| --- | --- |
| onAttach() | Called when the fragment is attached to its parent activity. |
| onCreate() | Called to initialize the fragment (similar to Activity.onCreate()). |
| onCreateView() | Called to inflate the UI of the fragment. |
| onViewCreated() | Called after onCreateView(), used to bind UI elements. |
| onStart() | Called when the fragment becomes visible. |
| onResume() | Called when the fragment is interactive. |
| onPause() | Called when the fragment is not active. |
| onStop() | Called when the fragment is no longer visible. |
| onDestroyView() | Called to clean up the fragment's UI. |
| onDestroy() | Called when the fragment is being destroyed. |
| onDetach() | Called when the fragment is detached from the activity. |

**Fragment Lifecycle Flow**

📌 **Fragment is added to Activity → Lifecycle goes through:**

sh

onAttach() → onCreate() → onCreateView() → onViewCreated() → onStart() → onResume()

📌 **Fragment is removed or replaced → Lifecycle goes through:**

sh

onPause() → onStop() → onDestroyView() → onDestroy() → onDetach()