MVC Architecture in OAF

The **MVC architecture** is a component-based design pattern with clean interfaces between the Model, View, and Controller.
The MVC architecture, being the industry standard for networked applications is employed in the Oracle Applications Framework and various components of the OA framework help implement the features of MVC.

Model

♣ The **Model** is where the application implements its business logic. All the BC4J components in OAF comes under Model like AM (Application Module), VO (View Object), EO (Entity Object), VL (View Link) & AO (Association Object).

The Model in the OA framework is known as the **Application Module** or the **AM.** It is implemented using the Oracle Business Components for Java (BC4J) which is optimized ready-to-use implementation of J2EE design patterns. These BC4Js actually help the developers to concentrate on writing code for business logic rather than code for the connecting glues and pipes.

The BC4J application model (AM) is basically a container that manages and provides access to related model objects i.e. the ones that participate in same end-to-end transactions. Each OA Framework page has a root AM that is associated with the top level region of the page known as the Page Layout region.

The other basic functions of the AM are:-

Providing context to the transactions. This context is known as the Page Context.
Establishing Database Connections.

View

♣ The **View** is where the application implements its user interface. View means the UI (User Interface) that is visible to the Users.

The View in the OA Framework is implemented using the User Interface XML or UIX. UIX uses XML to describe the components and hierarchy that make up an application page. The metadata used to describe the UI is loaded into a database repository, called Meta Data Services (MDS), at deployment time and optionally at design time as well. UIX also provides runtime capabilities to translate this metadata into HTML output so that it can be shown on a Browser or a mobile device. Various features that can be implemented using OA Framework UI are:-

PPR – Partial Page Rendering for displaying only the requisite parts of a page at a time.
Hot Keys – Numeric keys for easy access to specific fields on a form
LOV Auto Completion – Also known as List Of Value Completion that helps search a value to enter from a long list of values
Smart Poplist – Query based independent drop down lists.

Control

♣ The **Controller** is where the application handles user interaction and directs business flow. Controller is a simple java class file that contains methods for initial page request and post back request.

The Control in the OA Framework is known as the Controller Object or CO and has a normal java class based implementation. Its major functions are:-

Handling user-driven interactions.
Handling application-driven interactions.
Implementing two step transactions i.e. two step page flows.
Instantiating the Model objects.
Invoking appropriate Model object methods.
Displaying context based UI messages.

The controller is basically limited to contain two java methods which are of primary use. One is the **processRequest** function which is called when the page is being rendered for the first time. The other function is the **processFormRequest** which is called on submits or page events.