**Magento 2 UI**

**Rendering System**

* **Template**
* **Blocks**
* **UiComponents**
* **Xml layout**

1. **Template**

* Templates in Magento are \*.phtml files that contain HTML and PHP instructions.

1. **Block**

* Block is provide business logic of template.
* It’s Reusable functionality

1. **UiComponents**

* UI that is rendered by JavaScript
* it still depends on the backend to obtain its data.

1. **Xml Layout**

* You define the structure of a page using xml instructions.

**Rendering Flow**

**Rendering Steps**

* Index.php -> Bootstrap::run() ->App::launch() ->FrontController::dispatch()
* Router::match()->Controller::execute()->View::loadLayout()->View::renderLayout()->Responce::sendResponse()

Step 1. It starts with the App:: launch()

Step 2. Dispatch ForntController::dispatch()

Step 3. Execute execute() method of controller

Step 4. Create ResultFactory::create() object

Step 5. Return the Page object to App

Step 6. Execute Page::renderResult()

**Result Object**

**Page** : Magento\Framework\View\Result\Page, Use to render html page using layout

* + - * **Magento\Framework\View\Result\Page extends Magento\Framework\View\Result\Layout**
      * **Magento\Framework\View\Result\Layout extends Magento\Framework\Controller\AbstractResult**
      * **Magento\Framework\Controller\AbstractResult implements Magento\Framework\Controller\ResultInterface**

**Json** : Magento\Framework\View\Result\Json, use to render json output

**Forward**: Magento\Framework\View\Result\Forward, use to forword en execution to another action

**Redirect**: Magento\Framework\View\Result\Redirect, use to redirect browser to another route.

**Page::renderResult() Flow**

App->Page::renderResult()->Page::render()->Page::renderPage()->Responce::appendBody()

* Page::renderPage() includes the rootTemplate.
* rootTemplate includes all the major elements of the page, such as headAttribute, bodyContent, and so on. You can find rootTemplate in: **Magento/Theme/view/base/templates/root.phtml**

**Page::render()**

Render() method call 2 more method call 1. publicConfig::publicBuild() and 2. Response::appendBody()

**publicBuild() Flow**

Magento 2 page system has two step

1 build

2 render

We have tree actions

loadLayout()

generateLayout()

loadLayoutBlocks()

**View Elements**

* **UiComponents**
* reusable elements
* Ex. Form, grid, minicart....etc
* Its depends on javascript
* **Containers**
* It’s contains block and child containers
* It’s used to create a html tag(container)
* **Blocks**