Drupal, PHP & jQuery Interview Questions & Answers

Q: What is the difference between hook_preprocess_page and hook_preprocess_html?

A: - hook_preprocess_page: Used for preprocessing variables related to the page template.

- hook_preprocess_html: Used for modifying the HTML template variables before rendering.

Q: How to disable cache for a particular page?

A: Use `max-age: 0` in `#cache`, or implement an event subscriber to alter cache metadata.

Q: Why create an event subscriber when we can cancel cache from the .info file?

A: Event subscribers offer more flexibility for dynamic cache handling compared to static .info configuration.

Q: What is the difference between tag-based cache and context cache?

A: - **Tag-based Cache**: Invalidates specific cached content when related content updates.

- **Context Cache**: Stores multiple versions of the same cache based on context (e.g., user roles).

Q: What is an event in Drupal 8?

A: An event is a way to hook into the request/response lifecycle and perform actions when specific events occur.

Q: How to define and call custom functions in a Twig file?

A: Use `hook_theme` to define the template and `hook_preprocess_HOOK` to pass variables to the Twig file.

Q: How to use a custom template for a form in Drupal 8?

A: Implement `hook_theme()` to define a custom template and override the form render array.

Q: Multiple ways to pass variables into JavaScript in Drupal 8?

A: 1. `drupalSettings`
2. `hook_preprocess_page()`
3. `#attached` in render arrays

Q: What is 'use strict'?

A: It enforces stricter parsing and error handling in JavaScript, preventing undeclared variables.

Q: What is the context in Drupal?

A: A context represents external factors like user roles or languages that affect caching and rendering.

Q: How to get all form fields by passing form ID?

A: Use `drupal_get_form($form_id)` and inspect the render array.

Q: Use of `__invoke()` in PHP?

A: It allows an object to be called as a function by defining `__invoke()` inside a class.

Q: Difference between `array_merge` and `array_combine`?

A: - `array_merge`: Merges two arrays, maintaining numeric keys.

- `array_combine`: Creates an associative array using one array for keys and another for values.

Q: Binary search vs array_filter: Which is faster?

A: Binary search is faster for sorted arrays (O(log n)), while `array_filter` has O(n) complexity.

Q: What is `Ds\Sequence` class error in PHP?

A: It requires the `ds` extension. Install it via PECL: `sudo pecl install ds`.

Q: Basic jQuery functions?

A: Selectors, event handling, effects (`hide()`, `fadeOut()`), AJAX (`$.get()`, `$.post()`), and DOM manipulation (`append()`, `remove()`).

Q: How to remove an element in jQuery?

A: Use `.remove()` to delete an element or `.empty()` to clear its content.

Q: How to check if an object is empty in jQuery?

A: Use `$.isEmptyObject(obj)` to check if an object has no properties.

Q: What is jQuery?

A: jQuery is a fast, lightweight JavaScript library designed to simplify HTML DOM manipulation, event handling, and AJAX.

Q: Basic jQuery functions?

A: 1. **Selectors**: `$()`
2. **Events**: `.click()`, `.hover()`
3. **Effects**: `.hide()`, `.fadeOut()`, `.slideUp()`
4. **DOM Manipulation**: `.append()`, `.html()`, `.remove()`
5. **AJAX**: `$.get()`, `$.post()`

Q: How to remove an element in jQuery?

A: Use `.remove()` to delete an element completely or `.empty()` to remove its contents but keep the element.

Q: How to check if an object is empty in jQuery?

A: Use `$.isEmptyObject(obj)` to check if an object has no properties.

Q: How to disable a button in jQuery?

A: Use `$('#buttonID').prop('disabled', true);` to disable a button.

Q: Difference between `text()`, `html()`, and `val()` in jQuery?

A: - `text()`: Gets or sets text content.

- `html()`: Gets or sets HTML content.

- `val()`: Gets or sets form input values.

Q: How to pass PHP variables to JavaScript in Drupal?

A: 1. Using `drupalSettings`

2. Using `hook_preprocess_page()`

3. Using `#attached` in render arrays

Q: What is a block in Drupal?

A: A block is a reusable piece of content that can be placed in different regions of a Drupal site.

Q: How to create a custom block in Drupal 8?

A: Create a module and implement `BlockBase` class to define a custom block.

Q: How does Drupal handle caching?

A: Drupal caches content using cache bins, cache tags, cache contexts, and max-age settings.

Q: How to clear Drupal cache?

A: Use `drush cache-rebuild` or navigate to **Configuration > Performance** and clear cache.

Q: How to add a JavaScript library in a Drupal module?

A: Define it in `MODULE.libraries.yml` and attach it using `#attached` in a render array or `hook_preprocess_page()`.

Q: What are some commonly used Drupal hooks?

A: - `hook_menu()` (deprecated in D8, use routes)

- `hook_form_alter()` (modify forms)

- `hook_preprocess_HOOK()` (modify templates)

- `hook_entity_update()` (respond to entity updates)

Q: What is the difference between an entity and a node in Drupal?

A: - **Entity**: Generic data structure in Drupal (e.g., nodes, users, taxonomy terms).

- **Node**: A type of entity representing content (e.g., articles, pages).

Q: How to create a new node programmatically in Drupal 8?

A: Use `Node::create()` and `save()` method:
```php
$node = \Drupal\node\Entity\Node::create([
  'type' => 'article',
  'title' => 'New Node Title',
]);
$node->save();
```

Q: What is a service in Drupal?

A: A service is a reusable piece of functionality managed by the Drupal service container. It is defined in `MODULE.services.yml`.

Q: How to override a service in Drupal?

A: Override it in `services.yml` and tag it accordingly.

Q: What is the purpose of hook_theme()?

A: Defines new templates and themeable functions in Drupal.

Q: How to define a custom route in Drupal 8?

A: Define it in `MODULE.routing.yml`:
```yaml
mymodule.custom_page:
  path: '/custom'
  defaults:
    _controller: '\Drupal\mymodule\Controller\CustomController::content'
  requirements:
```

```
  _permission: 'access content'
```

Q: What is a plugin in Drupal?

A: A reusable component used for extending functionalities like blocks, fields, or widgets.

Q: How does Drupal handle authentication?

A: Drupal supports authentication via cookies, JWT, and OAuth2 using the `simple_oauth` module.

Q: How to disable cache for a particular page in Drupal?

A: Set `max-age: 0` in the render array or use an event subscriber to alter cache metadata.