

PLUGIN API

by examples

gambry

DrupalCamp London

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MANIFESTO

ABOUT ME

Hi, I'm:

- Gabriele / Gabi / gambry
- 15+ PHP / 10+ Drupal
- Lead Drupal Engineer/Consultant @ MANIFESTO

I Like:

- Drupal, PHP, Javascript, Deployment, Performance
- Chatbots and Personal Assistants, Encryption
- Altered Carbon



BY EXAMPLES

THE QUICKEST WAY TO THE DARK SIDE

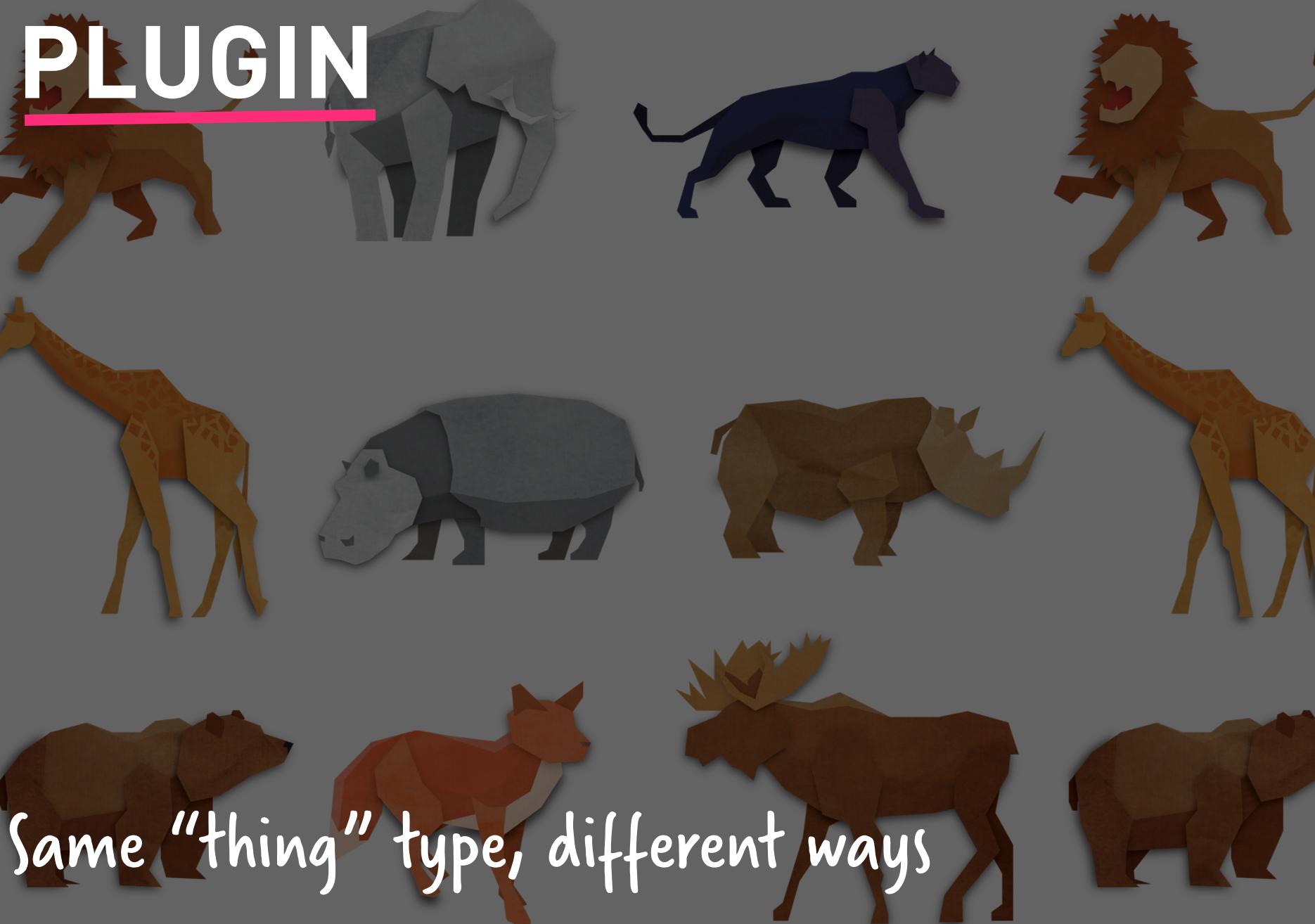


ENTITY

A collection of colorful origami cranes of various colors and patterns, including red, yellow, blue, and green, arranged on a white background.

Same model, different data

PLUGIN



Same “thing” type, different ways

PLUGIN TYPES IN DRUPAL CORE

- > Field Formatters Form elements, for fields values input
- > Field Widgets Html elements, for fields values output
- > Block Html blocks, for miscellaneous usage
- > Migration Source Different SOURCES to get the data FROM
- > Migration Destination Different DESTINATIONS to store the data To

- > Field types, Entity types, Mail back-ends, Conditions, Views filters, Views arguments, and many more...



cheapadvisor

Brief : *Our Start-up needs a system like TripAdvisor*

Budget : £ 200

Deadline: Yesterday

PLUGIN API AT THE RESCUE!

Latest

London, England, United Kingdom

London E2, UK

Saturday 15:00

Sunny

6 °C | °F

Precipitation: 0%

Humidity: 48%

Wind: 17 mph

Bistrotheque

4.3 ★★★★☆ (316) · ££ · Restaurant

Hip warehouse-style diner & bar

0.7 mi · 23-27 Wadeson St

Closed · Opens 6PM

E Pellicci

4.7 ★★★★☆ (359) · Italian

Century-old Italian cafe with retro feel

1.0 mi · 332 Bethnal Green Rd

Closed · Opens 7AM Mon

Ellory - Hackney, London

4.4 ★★★★☆ (118) · ££ · Modern European restaurant

Modern British bistro fare & wine

1.0 mi · 1 Westgate St

Closed · Opens 6PM

PLUGIN TYPE

(cityWidget

Its plugins:

- Receive a city name as argument
- Build widgets with info about the city



INTERFACE

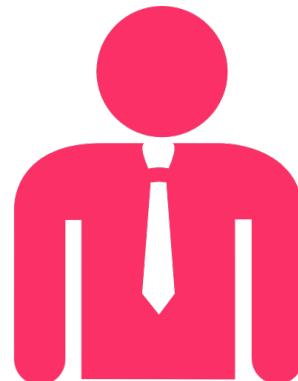
```
/**  
 * Defines an interface for City widget plugins.  
 */  
interface CityWidgetInterface extends PluginInspectionInterface {  
  
    /**  
     * Returns the renderable widget for provided city  
     *  
     * @param string $city  
     *   The name of the city to build the widget for.  
     *  
     * @return array  
     *   The renderable array.  
     */  
    public function buildWidget($city);  
}
```

Build the widget,
from the city

PLUGIN MANAGER

Service responsible for defining how to:

- Find CityWidget plugins (Discovery)
- Create instances of the plugin (Factory)
- Manage other aspect of our plugin type



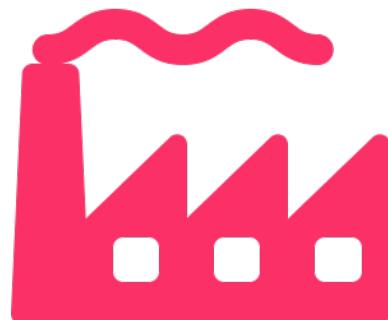
PLUGIN DISCOVERY

- Finds your CityWidget plugins
- Finds “Derivatives”, dynamically run-time defined CityWidget plugins
- Methods: Annotation, Yaml
- Other methods: hook, static, your own



PLUGIN FACTORY

- PHP Factory pattern
- LazyLoad: From plugin ID To Plugin object
- Method: DefaultFactory, ContainerFactory, ReflectionFactory



DON'T PANIC



You are not alone!

- Drupal Core
- Drupal Console

GENERATE YOUR PLUGIN TYPE

```
[gabrielemaira@local web]$
```

```
]
```

GENERATE YOUR PLUGIN TYPE

```
drupal generate:module
```

```
drupal generate:plugin:type:annotation
```

/modules/custom/cheap_advisor/cheap_advisor.info.yml
/modules/custom/cheap_advisor/cheap_advisor.module
/modules/custom/cheap_advisor/src/Annotation/CityWidget.php
/modules/custom/cheap_advisor/src/Plugin/CityWidgetBase.php
/modules/custom/cheap_advisor/src/Plugin/CityWidgetInterface.php
/modules/custom/cheap_advisor/src/Plugin/CityWidgetManager.php
/modules/custom/cheap_advisor/cheap_advisor.services.yml

- Weather Forecast
- List of restaurants

The tablet screen shows a weather app interface. At the top is a large, colorful owl logo. Below it is a location pin and the text "London, England, United Kingdom". The background of the main screen is a bright, sunny beach scene with many people under umbrellas. On the left side of the screen, there's a weather summary for "London E2, UK" at "Saturday 15:00" with the condition "Sunny". It shows a yellow sun icon and the temperature "6 °C | °F". To the right of this summary, there are three cards for restaurants: "Bistrotheque", "E Pellicci", and "Ellory - Hackney, London". Each card includes a small image, the restaurant name, its rating (4.3, 4.7, and 4.4 stars respectively), the cuisine type (Restaurant, Italian, Modern European), and a brief description.

| Restaurant | Rating | Cuisine | Description |
|--------------------------|--------|-----------------|--|
| Bistrotheque | 4.3 | Restaurant | Hip warehouse-style diner & bar 0.7 mi · 23-27 Wadeson St Closed · Opens 6PM |
| E Pellicci | 4.7 | Italian | Century-old Italian cafe with retro feel 1.0 mi · 332 Bethnal Green Rd Closed · Opens 7AM Mon |
| Ellory - Hackney, London | 4.4 | Modern European | Modern British bistro fare & wine 1.0 mi · 1 Westgate St Closed · Opens 6PM |

FORECAST

```
/**  
 * Provides a weather forecast CityWidget plugin.  
 *  
 * @CityWidget(  
 *   id = "weather_forecast",  
 *   label = @Translation("Weather Forecast")  
 * )  
 */  
class WeatherForecast extends CityWidgetBase {  
  
/**  
 * {@inheritDoc}  
 */  
public function buildWidget($city) {  
  return [  
    '#theme' => 'city_widget_weather_forecast',  
    '#forecast' => \Drupal::service('cheap_advisor.weather_forecast')->getFromCity($city),  
  ];  
}  
}
```

Plugin annotation
definition

Plugin logic

RESTAURANTS

```
/***
 * Provides a weather forecast CityWidget plugin.
 *
 * @CityWidget(
 *   id = "restaurants",
 *   label = @Translation("Restaurants")
 * )
 */
class Restaurants extends CityWidgetBase {

    /**
     * {@inheritDoc}
     */
    public function buildWidget($city) {
        return [
            '#theme' => 'city_widget_restaurants',
            '#restaurants' => \Drupal::service('cheap_advisor.restaurants')->getFromCity($city),
        ];
    }
}
```

IFRAMEs



cheap**advisor**

- <http://www.google.com/?q=Cool+Things+in+London>
- <http://tourism.biz/cities/London>
- <http://aroundtheworld.whatever/visit/London>
- <http://coolthings.to.do/places/London>
- <http://cheap.local/London>
- <http://hotels.com/London>
- <http://trivago.com/London>
- ...

IFRAMEs (derivatives)

```
/**
 * Provides a base CityWidget plugin for iframes derivatives.
 *
 * @CityWidget(
 *   id = "iframes",
 *   label = @Translation("Iframes"),
 *   deriver = "Drupal\cheap_advisor\Plugin\Derivative\Iframes"
 * )
 */
class Iframes extends CityWidgetBase {

 /**
 * {@inheritDoc}
 */
public function buildWidget($city) {
 $url = $this->pluginDefinition['iframe_url'];
 return [
 '#markup' => '<iframe src="" . $url . $city . "/>',
 ];
}
}
```

Base plugin

src/Plugin/CityWidget/Iframes.php

```
/**
 * CityWidget Iframes plugin deriver.
 *
 * @see \Drupal\cheap_advisor\Plugin\CityWidget\Iframes
 */
class Iframes extends DeriverBase {

 /**
 * {@inheritDoc}
 */
public function getDerivativeDefinitions($base_plugin_definition) {
 // Here your logic to load dynamic URLs.
 $urls = [...];
 foreach ($urls as $name => $iframe_url) {
 $this->derivatives['iframe:' . $name] = $base_plugin_definition;
 $this->derivatives['iframe:' . $name]['label'] = ucfirst($name);
 $this->derivatives['iframe:' . $name]['iframe_url'] = $iframe_url;
 }
 return $this->derivatives;
}
}
```

Deriver

src/Plugin/Derivative/Iframes.php

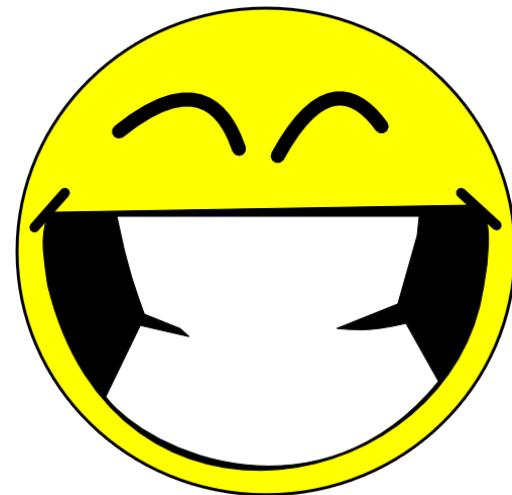
HOW TO USE IT

```
/**  
 * Build the City page content.  
 *  
 * @param string $city  
 *   The city, as passed by the request.  
 *  
 * @return array  
 *   Return city page content renderable array.  
 */  
public function pageContent($city) {  
  $output = [];  
  
  /** @var \Drupal\cheap_advisor\Plugin\CityWidgetInterface $widget */  
  foreach ($this->pluginManagerCityWidget->getDefinitions() as $widget) {  
    $output[$widget->getPluginId()] = $widget->buildWidget($city);  
  }  
  
  return $output;  
}  
}
```

Controller for
route /city/{city}



cheapadvisor



CHATBOT API



Drupal™



Dialogflow



Same “thing”, in different ways.

THANK YOU!

drupal.org/docs/8/api/plugin-api
@gambry

LONDON DRUPAL USER GROUP
meetup.com/London-Drupal-User-Group/