



CiviCRM Entity Webinar Series

Introduction to CiviCRM Entity

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What is CiviCRM Entity?

Provides comprehensive integration with Drupal 7/8/9 Entity API

Makes Drupal think CiviCRM data is native to Drupal

Wraps CiviCRM API into Drupal Core Drupal Entity API (Application Programming Interface)

What is a Drupal Entity?

In Drupal, entity is a general concept that represents a noun (person, place or thing).

Drupal provides API to make types of “things”

Example:

- Node (Content)
- User
- Taxonomy Term
- Commerce Product
- CiviCRM Contact (via CiviCRM Entity), and about 40 other CiviCRM entity types

<https://opensenselabs.com/blog/tech/exploring-drupal-entities-and-entity-types>

<https://www.unleashed-technologies.com/blog/drupal-entities>

What is a Drupal Entity?

Entities have properties (fields) and behaviors (methods)

The entity type defines the available fields and methods for entities of that type.

Examples of fields, Title, Status, Body text

Example of methods are save, delete, update

In Drupal 8 there are two flavors, content and configuration entity types
CiviCRM Entity provides CiviCRM records as content entity types.

Why are Drupal Entity types powerful?

One, consistent API to define, create, interact with entities of any type
Same code and methodology to interact with any “thing”

Any module that utilizes this API, can therefore interact with any entity type

Once your data is a proper Drupal entity, all the modules that utilize the API can use it.

Why is CiviCRM Entity powerful?

If you don't take away anything else it should be this:

CiviCRM Entity makes CiviCRM records more than just data, it becomes more like Content.

The power: There are 100s of modules that use Entity API, therefore 100s of modules to use to build with CiviCRM Entity and CiviCRM's data

Who is CiviCRM Entity for?

CiviCRM Entity is a tool for Drupal developers and site builders.

If you are a Drupal developer and new to CiviCRM, CiviCRM Entity will make you feel right at home.

Most popular use case is Drupal 8 Views integration, but this is just the beginning!

Where to get CiviCRM Entity

Drupal.org project page

https://www.drupal.org/project/civicrm_entity

Development on github

https://github.com/eileenmcnaughton/civicrm_entity/tree/8.x-3.x

Drupal.org version = stable

Github = cutting edge

Find out more about CiviCRM Entity

Blogs: <https://skvare.com/tags/civicrm-entity>

CiviCRM Mattermost chat:

<https://chat.civicrm.org/civicrm/channels/civicrm-entity>

<https://chat.civicrm.org/civicrm/channels/drupal>

Install CiviCRM Entity

Install stable release with composer:

```
composer require drupal/civicrm_entity
```

To install github repo development version, first add to “repositories” section of composer.json

```
"civicrm_entity": {  
  "type": "vcs",  
  "url": "https://github.com/eileenmcnaughton/civicrm_entity.git"  
},
```

```
composer require drupal/civicrm_entity:dev-8.x-3.x
```

Install CiviCRM Entity

Goto: <your-site>/admin/modules

Find “CiviCRM Entity”

Check box and hit save button

It's installed! Easy!

Setup CiviCRM Entity

For Drupal Views integration only, no additional configuration required

For Rules, Entity Reference, and 100s of other modules

Enable CiviCRM Entity types:

`admin/structure/civicrm-entity/settings`

See full list of stock entity types. Don't see one you need? CE can be extended in custom module, or contact Skvare to get additional features. That engages maximum Drupal integration.

Drupal Views

Views is a page and component builder

“View” your data in different ways

Report Builder, List Builder, SQL Query Builder

No Programming knowledge required!!!

Many additional Views module available, e.g Views Filter layouts, Charts!!

Devs: You can write custom plugins for each Views concept, and make magic!

What to build?

Common use cases:

- User dashboard blocks
- Membership Directory Page
- Upcoming Events
- Custom Reports
- Interactive Charts
- Interactive Maps

Basic Views Concepts

Base Table: the starting point of your query

Display: page, block, etc..

Format: List, Table, etc..

Field: Individual data columns, e.g Name, State, membership type

Filter: limit result set by criteria

Sort: How to order your result set

Pager: how many results per page, links for additional pages

No Results Behavior: What to show when View has no results

Title, Header, Footer: Add text or HTML to View

Advanced Views Concepts

Access: control who can view a View

Contextual Filter: Context as criteria, e.g url, user viewing the page

Relationship: Related data to “join” to base table, e.g Address of Contact

Aggregation: Calculations on the result set, e.g. SUM, COUNT, MIN, MAX

Create a View

Admin -> Structure -> Views -> Add a View

`admin/structure/views/add`

Name the View

Select what data to list. (base table)

Create a Page or Block View display

Save.

Views Displays

Page

Block

Components that can be placed on a page

Place multiple blocks per page

Attachment

Attach Views to other Views

More

Feeds, entity browsers, entity reference field option lists

Views Formats

How is the result set is formatted.

Basic:

1. Unformatted List
2. Formatted list
3. Table

Advanced:

- Chart
- Map

Custom:

For developers. Another webinar!

Views Fields

Add multiple data columns to the View

Configure:

Order of fields

Label

Formatter / HTML element

Advanced:

Rewriting, combining multiple fields

Views Filters

Criteria to limit result set.

E.g, limit View listing contacts by contact type.

Operators:

Depend on data type

Equals, greater than, less than, between, not empty (has any value) etc..

Views Exposed Filters

Allow users to filter result set.

Click on filter

Check the “Expose this filter to visitors, to allow them to change it” checkbox

Control Label, operator, optional expose operator

Views Exposed Filters - Advanced

Additional modules:

Better Exposed Filters

https://www.drupal.org/project/better_exposed_filters

Views Exposed Filter Layout

<https://www.drupal.org/project/vefl>

“Advanced” fieldset, “Exposed Form” group, “Exposed form style” option
Organize your exposed filters into multiple columns, “Secondary Options”
fieldset, much more

Contextual Filters

Same as filters, except the filter values are provided by various “contexts”
Context can be where the View is displayed and to who.

Example, Views blocks on user dashboard. The context is the user page being viewed.

Other examples include:

Limit result set by the current logged in user

Current date

Content page the View block is displayed on

Limit result set by url parameters.

Views Sorts

By what fields is the result set ordered

E.g. order by last name, then first name

Ascending or descending. Sorts can be “exposed” same as filters.

Advanced: Views Relationships

“Advanced” fieldset, “Relationships” section

Join additional tables to your base table

Examples:

List contacts, but include address, phone, email, Drupal user data

List Cases, and include Case activities

Views Relationship = SQL Join

Demo - Add a User Dashboard Block

Create “My Assigned Activities” View

View name: “My Activities”

Start with base table of “CiviCRM Activity”

Check “Create a block” checkbox

Display format: “Table”

Add relationship “Contact”, “Activity contact type” = “Target”

Add relationship “User related to the CiviCRM contact”

Add contextual filter, “Provide default value”, “Type” = “User ID from route context”

Add fields Subject and Activity Date

Save

Add block to user page (variety of Drupal-y ways to do this)

Advanced: Views Aggregation

“Advanced” Fieldset in the right column, “Other” group, “Use Aggregation”

Aggregation allows you to “group” results by one or more fields, and apply operations to all the records in the group, for a particular field.

Count, Sum, Min, Max, Standard Deviation, and more

For instance, Get a count of the number of memberships per membership type.

We group on type, and COUNT the number of membership ids per type.

Views Charts - Installation with Composer

<https://www.drupal.org/project/charts>

https://git.drupalcode.org/project/charts/-/blob/8.x-3.x/modules/charts_google/README.txt

composer require drupal/charts

Add to “repositories” section of composer.json:

```
{
  "type": "package",
  "package": {
    "name": "google/charts",
    "version": "45",
    "type": "drupal-library",
    "extra": {
      "installer-name": "google_charts"
    },
    "dist": {
      "url": "https://www.gstatic.com/charts/loader.js",
      "type": "file"
    },
    "require": {
      "composer/installers": "~1.0"
    }
  }
}
```

Then: **composer require --prefer-dist google/charts:45**

Views Charts

<https://www.drupal.org/project/charts>

Install Charts and Google Charts, modules

Provides “Format”, “Charts”

Line, pie, column, bar, line, and more chart types

Try other chart libraries and their modules for different look / feel

Views Charts - Memberships of Type Bar Chart

Create new View, base table “CiviCRM Membership”

Name: Memberships of Type, Bar Chart

Add fields Membership ID, Membership Type Id

Set membership ID label to “Memberships Count”

In “Advanced” , “Other” set “Use Aggregation” to “Yes”

Click on “Aggregation Settings” for Membership ID set “Aggregation type” to “Count”

Click on “Aggregation Settings” for Membership Type set “Aggregation type” to “Group results together”

Memberships of Type Bar Chart - Continue

Set “Format” to “Chart”

Set “Chart Type” = “Column”

Set “Charting Library” = “Google”

Check “Allow advanced rendering” checkbox

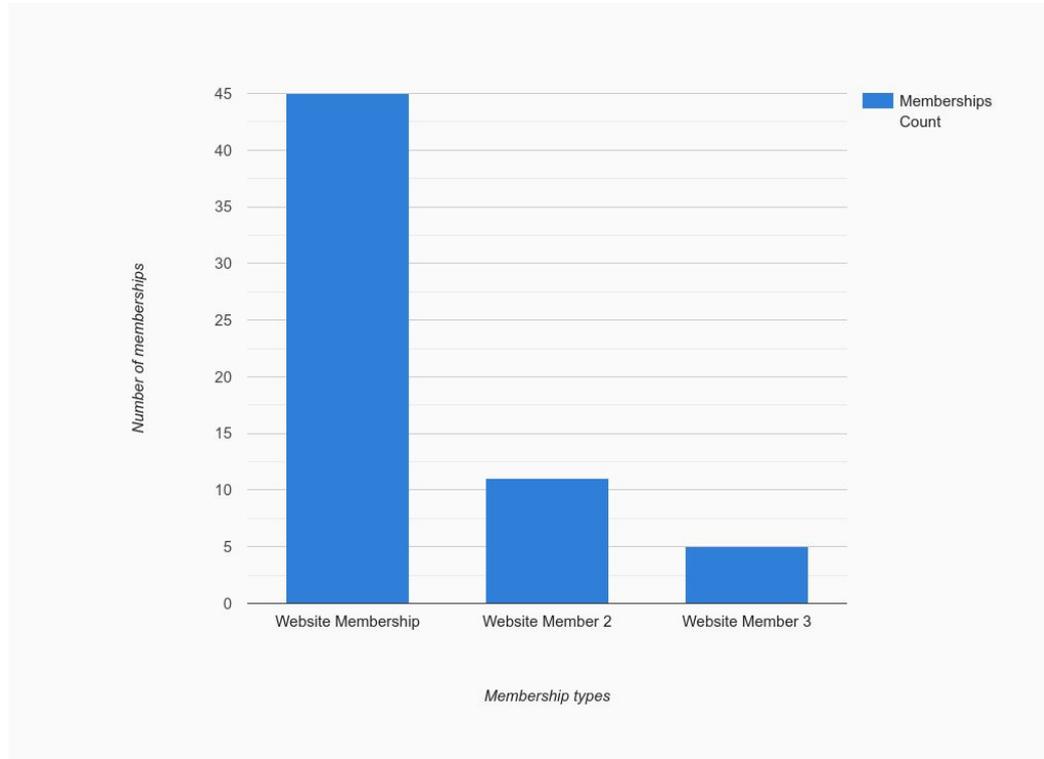
In Chart Fields section, set “Label field” = “Membership Type”

Below that, “Membership Counts” check “Provides Data”, “id” checkbox

Choose column color

Optionally set “Chart Title”, and “Custom Title” for “Horizontal Axis” and “Vertical Axis”

Memberships of Type Bar Chart



Want to learn more?

<https://skvare.com/contact>

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