



18: Other Topics





What Lava Is

- Template Language
- Bridge between the data in Rock and the content on a page.

What Lava Is Not

- A programming language.
- It's not hard... really... 



**There are only two hard things in
Computer Science:
cache invalidation, and
naming things.**



Phil Karlton *curmudgeon*
~~Principal Developer~~ at Netscape



Naming Things

Workflow Attributes Id: 0

Name *
I agree to the terms and conditions of this volunteer agreement, from this moment

Abbreviated Name

Description

Categories

Key *
Iagreetothetermsandconditionsofthisvolunteeragreementfromthismoment

Required
 Require a value

Show on Bulk
 Yes

Active i

Public i

Field Type
Boolean

True Text i
Yes

False Text i
No

Control Type i
Checkbox

Default Value



Naming Things

Attribute Keys

Your attribute keys don't have to match the name.

Make them easy to type in your lava later!

Workflow Attributes Id: 0 X

Name *	I agree to the terms and conditions of this volunteer agreement, from this moment forward.		
Abbreviated Name			
Description			
Categories	Boolean		
Key *	True Text		
Required	<input type="checkbox"/> Require a value	Show in Grid	<input type="checkbox"/> Yes
Show on Bulk	<input type="checkbox"/> Yes	False Text	
<input type="checkbox"/> No			
Control Type			
Checkbox			
Default Value			



Naming Things

Attribute Keys

But context is important too: person attributes probably need different names than workflow attributes.

Qualifier	Name
Person	Previous Journey Giving Stage
Person	Journey Giving Stage Change Date
Person	Selected Shirt Size
Person	Shirt Size
Person	I agree
Person	Reason for departure
Person	If Yes, please indicate the nature of the allegation
Person	If yes, please state the year and type of discharge
Person	Renewal Date
Person	Training Date
Person	Training date
Person	Date Trained
Person	Start Date



Naming Things

I Agree

Volunteer Agreement Date

Date Volunteer Agreed to
May 2024 Volunteer
Agreement

Take your time!



The best name is almost never the first name you think of.
Aim for enough context but not too much.
Think through all the places it will be displayed.



Naming Things

```
1  {% assign attr1 = CurrentPerson | Attribute:'BaptismDate' %}  
2  {% assign attr2 = CurrentPerson | Attribute:'Employer' %}  
3  {% assign attr3 = CurrentPerson.PrimaryFamily | Attribute:'IsFosterFamily' %}  
4  
5  <p>{{ CurrentPerson }} works for {{ attr2 }}  
6  and is {% if attr1 == '' %}not {% endif %}baptized.</p>  
7  
8  {% if attr3 == 'Yes' %}  
9    <p>They are a foster family.</p>  
10   {% endif %}
```



Naming Things

```
1  {% assign baptism = CurrentPerson | Attribute:'BaptismDate' %}  
2  {% assign employer = CurrentPerson | Attribute:'Employer' %}  
3  {% assign foster = CurrentPerson.PrimaryFamily | Attribute:'IsFosterFamily' %}  
4  
5  <p>{{ CurrentPerson }} works for {{ employer }}  
6  and is {% if baptism == '' %}not {% endif %}baptized.</p>  
7  
8  {% if foster == 'Yes' %}  
9    <p>They are a foster family.</p>  
10   {% endif %}
```

```
{% if baptism > '1900-01-01' %}
```



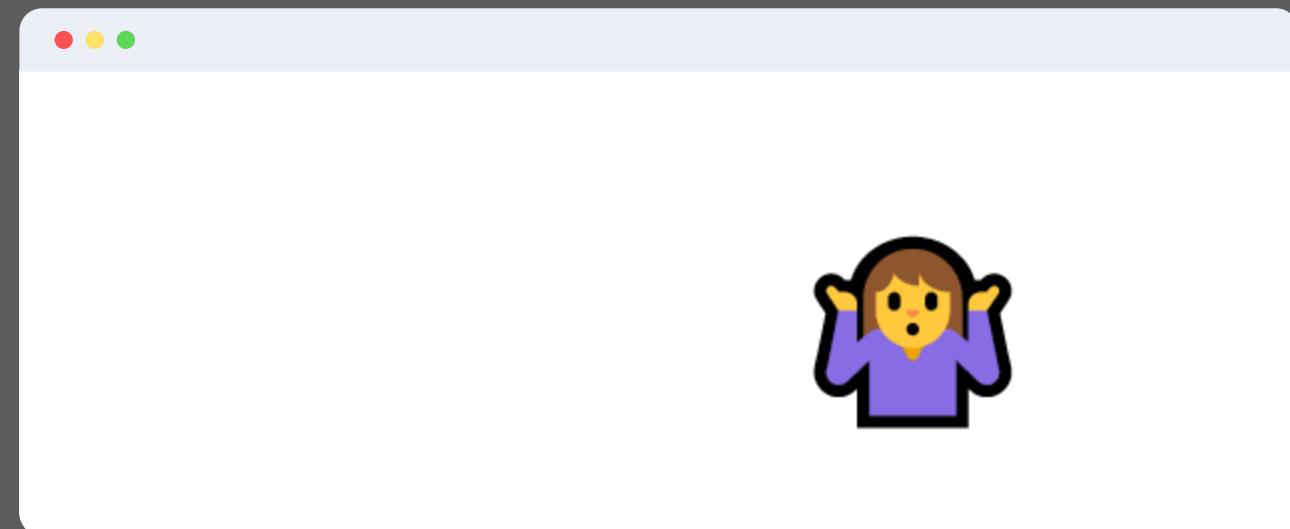
Naming Things

```
1  {% assign baptismDate = CurrentPerson | Attribute:'BaptismDate' %}
2  {% if baptismDate != null and baptismDate != empty %}
3    {% assign isBaptized = true %}
4  {% else %}
5    {% assign isBaptized = false %}
6  {% endif %}
7
8  {% assign employerName = CurrentPerson | Attribute:'Employer' %}
9  {% assign isFosterFamily = CurrentPerson.PrimaryFamily | Attribute:'IsFosterFamily' %}
10
11 <p>{{ CurrentPerson }} works for {{ employerName }}
12 and is {% if isBaptized == false %}not {% endif %}baptized.</p>
13
14 {% if isFosterFamily == 'Yes' %}
15   <p>They are a foster family.</p>
16 {% endif %}
```



Naming Things

```
1  {% assign groups = '5' | Groups:25 %}  
2  {% for person in groups %}  
3    {{ person.FullName }}  
4  {% endfor %}
```





Naming Things

Groups Show Details
Server: v4.0

Returns a list of group member models of a specified group type that an individual belongs to.

Additional Details

This filter has a couple of input parameters:

- Group Type: The group type that should be used as a filter. Returned groups must be of this type.
- Group Member Status (optional): You can also pass in a specific group member status you're looking for ('Active', 'Inactive' or 'Pending'). The default if none is provided is 'Active'. You can also pass in 'All' if you want all statuses.
- Group Status (optional): By default the filter will only include active groups. Pass the string 'All' to include inactive groups as well. v9.2

This filter returns group member records. See the example below for how to access common properties.

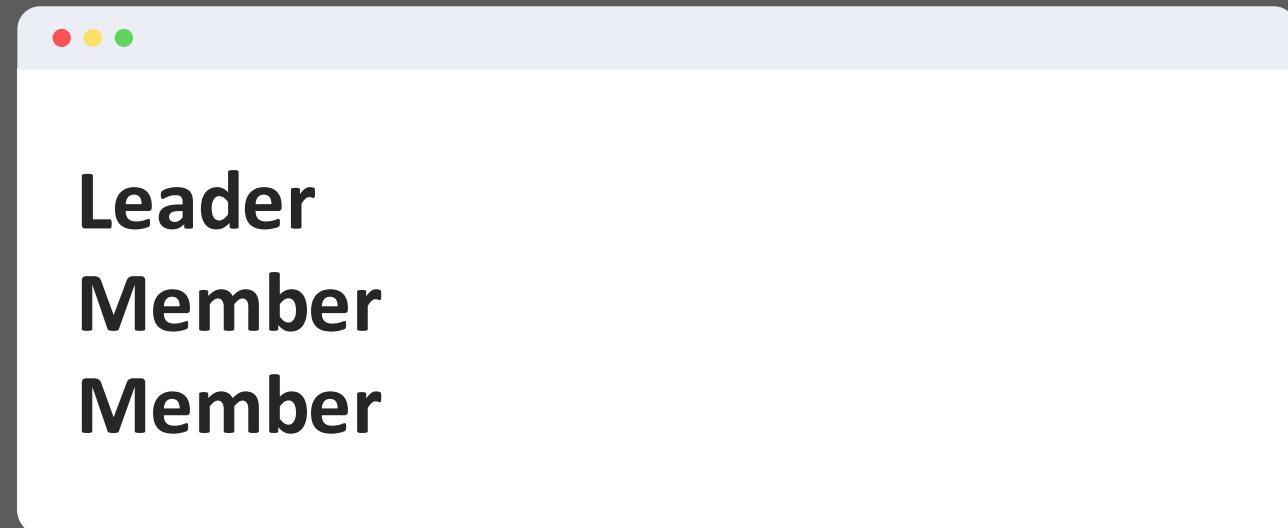
Example:

INPUT	LAVA	OUTPUT
"CurrentPerson": { ... }	<pre>{% assign groupMembers = CurrentPerson Groups:'29','All' %}</pre>	
	<pre> {%- for groupMember in groupMembers %} {{ groupMember.Group.Name }} ({{ groupMember.GroupMemberStatus }}) {%- endfor %} </pre>	
		<pre> General Group 1 (Active) General Group 2 (Inactive) </pre>



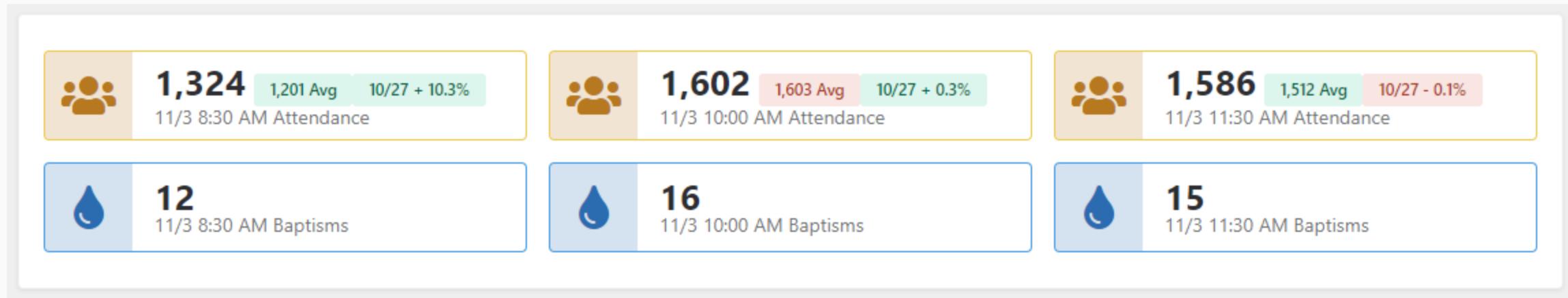
Naming Things

```
1  {% assign memberships = '5' | Groups:25 %}  
2  {% for member in memberships %}  
3    {{ member.GroupRole.Name }}<br>  
4  {% endfor %}
```



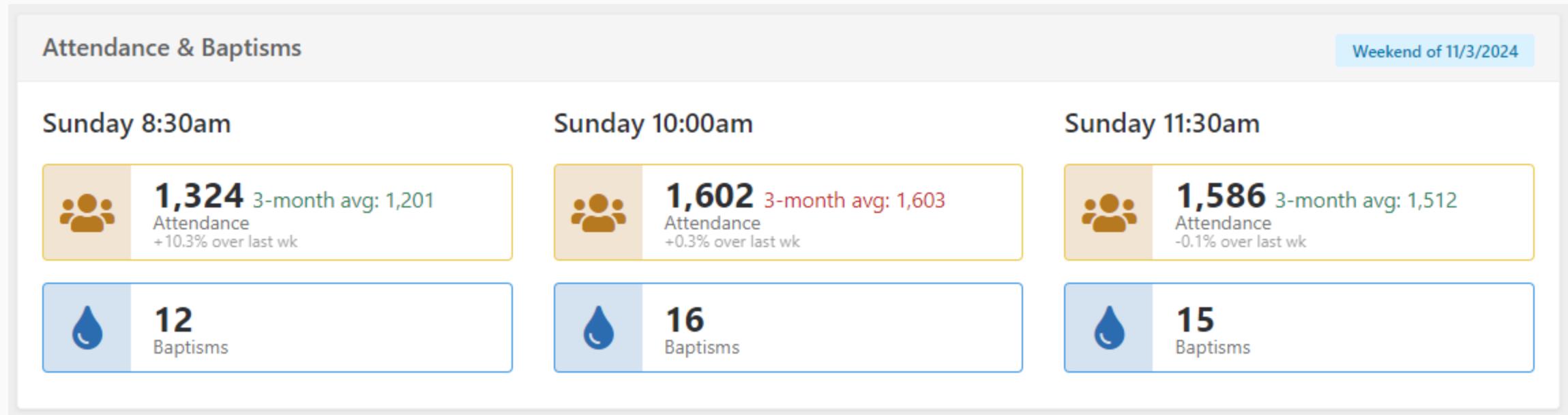


Naming Things





Naming Things

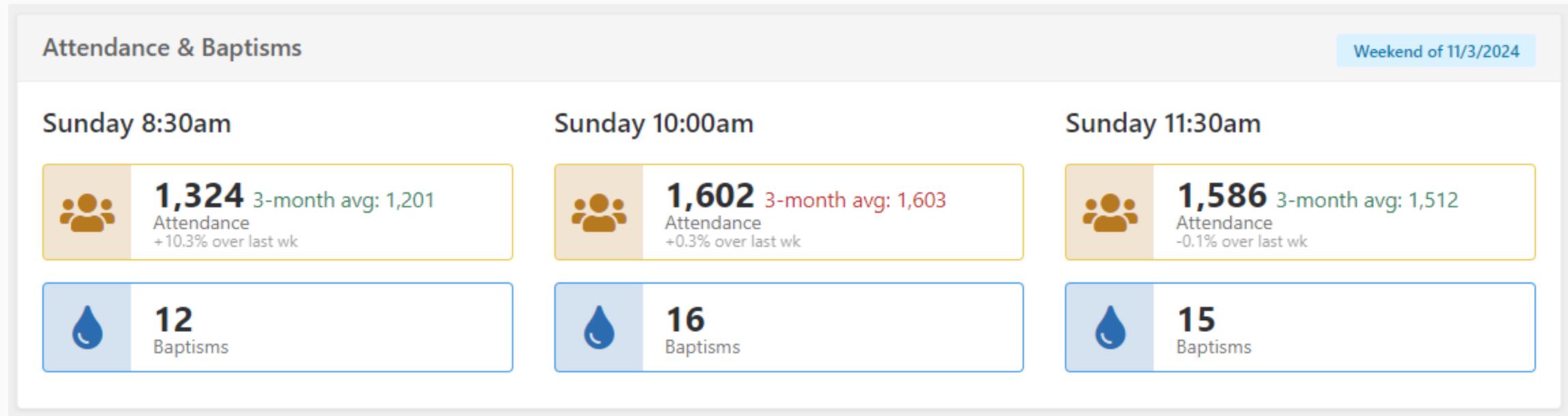


Visual Hierarchy

Make sure the important things are given more weight (size, contrast) than other things.
Give context and groupings outside the data where possible.



Naming Things



color:'yellow-700'

color:'blue-700'

class="text-red-700"
class="text-green-700"



Don't Repeat Yourself

DRY principle ≈ Single Source of Truth

If you repeat a list or knowledge in more than one place, the inevitable changes must be perfectly duplicated as well to avoid conflicts.





Don't Repeat Yourself

Rock and the Single Source of Truth

- Data Views
 - Reports, Other Data Views, Lava, Sync, Requirements, etc.
- One Event, many Occurrences.
- One Template, many Registrations.





Don't Repeat Yourself: Lava Short Codes

Home > CMS Configuration > Lava Shortcodes > Lava Shortcode Detail

Add Lava Shortcode

Name *: About Us Active

Tag Name i *: aboutus Tag Type i *: Inline Block

Categories: Web x ▾

Description: Provides the "About Us" description for our church, customized based on whether the person is a logged in adult or not.

Documentation i:

Use this shortcode wherever you want to display the "About Us" text - it will automatically be customized if the person is a logged in adult.

Usage:

Text Editor Tools: B I S A H E F G M P C C



Don't Repeat Yourself: Lava Short Codes

```
1  {% assign firstAttendDate = CurrentPerson | Attribute:'FirstAttended' %}  
2  {% if firstAttendDate != null and firstAttendDate != empty %}  
3      {% assign hasAttendance = true %}  
4  {% else %}  
5      {% assign hasAttendance = false %}  
6  {% endif %}  
7  
8  {% assign missionSteps = CurrentPerson | Steps:1,'Complete' %}  
9  
10 <p>Our church was established in June of 1960  
11     {% if hasAttendance %}  
12         , but {{ firstAttendDate | HumanizeTimeSpan }} we were  
13         blessed to have you join our mission, {{ CurrentPerson.NickName }}  
14     {% endif %}.  
15 </p>
```



{[aboutus]}



Don't Repeat Yourself: Lava Short Codes

Lava Shortcode Detail

Home > CMS Configuration > Lava Shortcodes > Lava Shortcode Detail

Edit Lava Shortcode

Name *: Step Badges

Active:

Tag Name i *: stepbadges

Tag Type i *: Inline Block

Categories: Web

Description: Displays a person's badges for all Step Types in a specified Step Program.

Navigation icons on the left: Document, User, Wallet, Wrench, Briefcase.

Top right: Bell, Bookmarks, Search, Name dropdown, Profile icon.



Don't Repeat Yourself: Lava Short Codes

Description

Displays a person's badges for all Step Types in a specified Step Program.

Documentation ⓘ

Use this shortcode to display a person's progress through a Step Program.
It either requires a PersonId to be provided, or else to have a "Person" entity in the context.
If the person doesn't have some steps, the badge will be shown as "Disabled". Otherwise they'll be colored according to the status color.

Usage:

```
{[ stepbadges stepprogramid:'1' ]}
```

Options:

- **stepprogramid:** (required) The Id of the Step Program whose step types you wish to show.
- **personid:** (optional, defaults to the Context Person).

Shortcode Markup •

```
1  {% if personid > 0 %}  
2    {% assign person = personid | PersonById %}  
3  {% else %}  
4    {% assign person = Context.Person %}  
5  {% endif %}
```



Don't Repeat Yourself: Lava Short Codes

Shortcode Markup •

```
1  {% if personid > 0 %}  
2    {% assign person = personid | PersonById %}  
3  {% else %}  
4    {% assign person = Context.Person %}  
5  {% endif %}  
6  
7  {% assign completedSteps = person | Steps:'{{ stepprogramid }}' %}  
8  
9  /- ----- -/  
10  
11  {% steptype where:'StepProgramId == "{{ stepprogramid }}"' iterator:'programSteps' %}  
12    {% for stepType in programSteps %}  
13      {% assign personStep = completedSteps | Where:'StepTypeId',stepType.Id | OrderBy:'StepStatus.Order desc' | First %}  
14      {% assign personStepStatus = personStep.StepStatus | Default:'NoStep' %}  
15  
16      {% if personStepStatus == 'NoStep' %}  
17        <div class="rockbadge rockbadge-icon rockbadge-disabled">  
18      {% else %}  
19        <div class="rockbadge rockbadge-icon" style="color: {{ personStep.StepStatus.StatusColor }}">  
20          {% endif %}  
21          <i class="badge-icon {{ stepType.IconCssClass }}></i></div>  
22      {% endfor %}  
23  {% endsteptype %}
```

Parameters ⓘ

stepprogramid	0	x
personid	Value	x

+

Enabled Lava Commands

<input type="checkbox"/> All	<input type="checkbox"/> Interaction
<input type="checkbox"/> Adaptive Message	<input type="checkbox"/> Content Channel
<input type="checkbox"/> Cache	<input type="checkbox"/> Item Write
<input type="checkbox"/> Calendar Events	<input type="checkbox"/> Interaction Intent
<input type="checkbox"/> Event Scheduled	<input type="checkbox"/> Write
<input type="checkbox"/> Instance	<input type="checkbox"/> Interaction Write
<input type="checkbox"/> Execute	<input type="checkbox"/> Observe

Rock Entity

Search

Sql

Web Request

Workflow Activate

Save Cancel



Don't Repeat Yourself: Lava Short Codes

```
1  {[ panel ]}  
2    {[ stepbadges stepprogramid:'1' ]}  
3  {[ endpanel ]}
```

The screenshot shows the Lava software interface. At the top, there's a navigation bar with icons for Profile, Extended Attributes, Steps (which is currently selected), Groups, Documents, Contributions, and More. Below the navigation bar is a user profile card for "Ted Decker". The profile includes a photo, the name "Ted Decker", a lock icon indicating it's locked, and status badges for "Member" and "Main Campus". To the right of the profile is a stats section showing "11 yr" and "4 /16" with a bar chart. A red arrow points from the "Stepbadges" short code in the code block above to the "Stepbadges" icon in the navigation bar. Below the profile is a "Discipleship Path" section with four items: "Baptism" (Complete, 1/20/2006), "Starting Point Class" (In Progress), "Serve" (In Progress), and "Small Group" (In Progress). On the left side, there's a vertical sidebar with icons for Profile, Extended Attributes, Steps, Groups, Documents, Contributions, and More.



Don't Repeat Yourself: Lava Short Codes

```
1  {% assign familyMembers = CurrentPerson.PrimaryFamilyId | GroupById | Property:'Members' | Map:'Person' %}  
2  
3  {[ panel title:'Family Badges' ]}  
4      {% for person in familyMembers %}  
5  
6          <div>  
7                
8              <strong>{{ person.FullName }}</strong><br>  
9              {{ person.ConnectionStatusValue.Value }}  
10         </div>  
11         {[ stepbadges stepprogramid:'1' personid:'{{ person.Id }}' ]}  
12         <hr>  
13  
14     {% endfor %}  
15 {[ endpanel ]}
```



Don't Repeat Yourself: Lava Short Codes

```
1  {% assign familyMembers = CurrentPerson.PrimaryFamilyId | GroupById | Property:'Members' | Map:'Person' %}  
2  
3  {{ panel title:'Family Badges' }}  
4      {% for person  
5          Rock Solid Church Demo  
6              <div>  
7                  <img src={{ person.Picture }}>  
8                  <strong>{{ person.Name }}</strong>  
9                  {{ person.BirthDate | Date:'MM/DD/YYYY' }}  
10             </div>  
11             {{ stepbadges }}  
12             <hr>  
13  
14     {% endfor %}  
15  {{ panel }}
```

Rock Solid Church Demo

New Here? Resources Connect Give Blog Calendar Watch Hello Ted ▾

My Account

Home / My Account



Ted Decker

38 years old (2/10/1986)
Male
Married 21 yrs (1/4)

Family Badges

 Ted Decker Member				
 Cindy Decker Member				
 Noah Decker Attendee				
 Alex Decker Attendee				

Contact Information

Home Address
11624 N 31st Dr
Phoenix, AZ 85029-3202

Email
ted@rocksolidchurchdemo.com

Update Profile

Decker Family



Don't Repeat Yourself: Lava Short Codes



Letter from the pastor

Happy Tuesday, Church family!

I'll be brief this week; there's a lot of things we want to share with you. So I'll let each of the ministries speak for themselves. But thank you for what you're doing for Rock Solid Church - I love being a part of this family!

Children News

In tritani eleifend comprehensam cum, pro autem cotidieque et. Malis afferit eu sea, ne ponderum menandri incorrupte sed. Ne quod dico sea, no lorem homero assueverit eos. Has id feugiat facilisi reprehendunt, at eligendi incorrupte usu.

Id vix regione eligendi vituperatoribus, ne qui appareat inciderint, ius an malis saepe civibus. Magna putant per ut, splendide inciderint vis ei. Aliquip inimicus maluisset vix id, pro ea rationibus constituto. Pro vidisse ancillae in. Veritus senserit abhorreant nec id. Ad paulo veniam officiis sea.

Ex mea dicant docendi, natum prompta an est. Ius ei autem reprehendunt, velit detracto mei ad, at probo recteque cum. Eam no reque graece, enim agam sale ea per. Etiam deterruisset ad est. Eam cibo accusamus intellegat in.

Adults Updates

Of Myths and Money, lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed dignissim euismod arcu, volutpat feugiat tortor luctus vitae. Suspendisse efficitur faucibus ante at facilisis. Phasellus in velit suscipit lectus tempus dapibus vitae eu quam. Fusce venenatis mauris non ante scelerisque, sit amet blandit odio ultricies. In sed lacinia dui, eu blandit metus. Ut ante enim, facilisis sed pretium et, posuere vitae felis. Phasellus ornare mauris mauris, eget pretium nibh imperdier ac. Integer eleifend dui ut nisl sagittis mattis. Nunc consectetur consequat tristique. Pellentesque luctus tortor nec quam pulvinar iaculis.

Rock Solid Church Demo

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In tritani eleifend comprehensam cum, pro autem cotidieque et. Malis afferit eu sea, ne ponderum menandri incorrupte sed. Ne quod dico sea, no lorem homero assueverit eos. Has id feugiat facilisi reprehendunt, at eligendi incorrupte usu.

Id vix regione eligendi vituperatoribus, ne qui appareat inciderint, ius an malis saepe civibus. Magna putant per ut, splendide inciderint vis ei. Aliquip inimicus maluisset vix id, pro ea rationibus constituto. Pro vidisse ancillae in. Veritus senserit abhorreant nec id. Ad paulo veniam officiis sea.

Ex mea dicant docendi, natum prompta an est. Ius ei autem reprehendunt, velit detracto mei ad, at probo recteque cum. Eam no reque graece, enim agam sale ea per. Etiam deterruisset ad est. Eam cibo accusamus intellegat in.

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3120 W Cholla St Phoenix, AZ 85029-4113



Don't Repeat Yourself: Lava Short Codes

Shortcode Markup •

```
1  {% case ministry %}  
2    {% when 'Children' or 'children' %}  
3      {% assign channelId = 3 %}  
4    {% when 'Adults' or 'adults' %}  
5      {% assign channelId = 4 %}  
6    {% when 'Outreach' or 'outreach' %}  
7      {% assign channelId = 27 %}  
8    {% when 'Missions' or 'missions' %}  
9      {% assign channelId = 31 %}  
10   {% endcase %}  
11  
12  /----- /  
13  
14  {% if channelId > 0 %}  
15    {% assign hTag = titlesize | Default:'3' %}  
16  
17    {% if hTag != 0 %}  
18      <h{{ hTag }} class="{{ titleclass }}" style="{{ titlestyle }}>{{ ministry | TitleCase }} {{ titleclosing }}</h{{ hTag }}>  
19    {% endif %}  
20  
21    {% contentchannelitem where:'ContentChannelId == "{{ channelId }}" && Status == "2" && StartDateTime < "{{ 'Now' | Date }}"' sort  
22      : 'StartDateTime desc' limit:'1' iterator:'Item' securityenabled:'false' %}  
23      {{ Item[0].Content }}  
24    {% endcontentchannelitem %}  
25  {% endif %}
```

Parameters ⓘ

ministry	Value	x
titlesize	3	x
titleclass	Value	x
titlestyle	Value	x
titleclosing	News	x

Enabled Lava Commands

<input type="checkbox"/> All	<input type="checkbox"/> Execute	<input type="checkbox"/> Observe
<input type="checkbox"/> Adaptive	<input type="checkbox"/> Interaction	<input checked="" type="checkbox"/> Rock Entity
Message	Content Channel	<input type="checkbox"/> Search
<input type="checkbox"/> Cache	<input type="checkbox"/> Item Write	<input type="checkbox"/> Sql
<input type="checkbox"/> Calendar Events	<input type="checkbox"/> Interaction Intent	<input type="checkbox"/> Web Request
<input type="checkbox"/> Event Scheduled	<input type="checkbox"/> Write	<input type="checkbox"/> Workflow
Instance	<input type="checkbox"/> Interaction Write	<input type="checkbox"/> Activate

+



Don't Repeat Yourself: Lava Short Codes

```
1 <h2>Letter from the Pastor:</h2>
2 <p>Happy Tuesday, Church family!</p>
3 <p>
4   I'll be brief this week; there's a lot of things we want to
5   So I'll let each of the ministries speak for themselves.
6 </p>
7 <p>
8   But thank you for what you're doing for Rock Solid Church-
9 </p>
10
11 <hr>
12
13 {[ latestcontent ministry:'children' ]}
14
15 <hr>
16
17 {[ latestcontent ministry:'Adults' titleclosing:'Updates' ]}
```



Letter from the pastor

Happy Tuesday, Church family!

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Children News

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Id vix regione eligendi vituperatoribus, ne qui appareat inciderint, ius an malis saepe civibus. Magna putant per ut, splendide inciderint vis ei. Aliquip inimicus maluisset vix id, pro ea rationibus constituto. Pro vidisse ancillae in. Veritus senserit abhorreant nec id. Ad paulo veniam officiis sea.

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Adults Updates

Of Myths and Money, lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed dignissim euismod arcu, volutpat feugiat tortor luctus vitae. Suspendisse efficitur faucibus ante at facilisis. Phasellus in velit suscipit lectus tempus dapibus vitae eu quam. Fusce venenatis mauris non ante scelerisque, sit amet blandit odio ultricies. In sed lacinia dui, eu blandit metus. Ut ante enim, facilisis sed pretium et, posuere vitae felis. Phasellus ornare mauris mauris, eget pretium nibh imperdiet ac. Integer eleifend dui ut nisl sagittis mattis. Nunc consectetur consequat tristique. Pellentesque luctus tortor nec quam pulvinar iaculis.



Don't Repeat Yourself: Lava Short Codes

```
1 {[ latestcontent titlesize:'0' ministry:'children' ]}
```

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Children

Home / Connect / Children

- Children
- Students
- Adults
- Prayer
- Missions
- Serve

In tritani eleifend comprehensam cum, pro autem cotidieque et. Malis affert eu sea, ne ponderum menandri incorrupte sed. Ne quod dico sea, no lorem homero assueverit eos. Has id feugiat facilisi reprehendunt, at eligendi incorrupte usu.

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Adults Updates

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In tritani eleifend comprehensam cum, pro autem cotidieque et. Malis afferit eu sea, ne ponderum menandri incorrupte sed. Ne quod dico sea, no lorem homero assueverit eos. Has id feugiat facilisi reprehendunt, at eligendi incorrupte usu.

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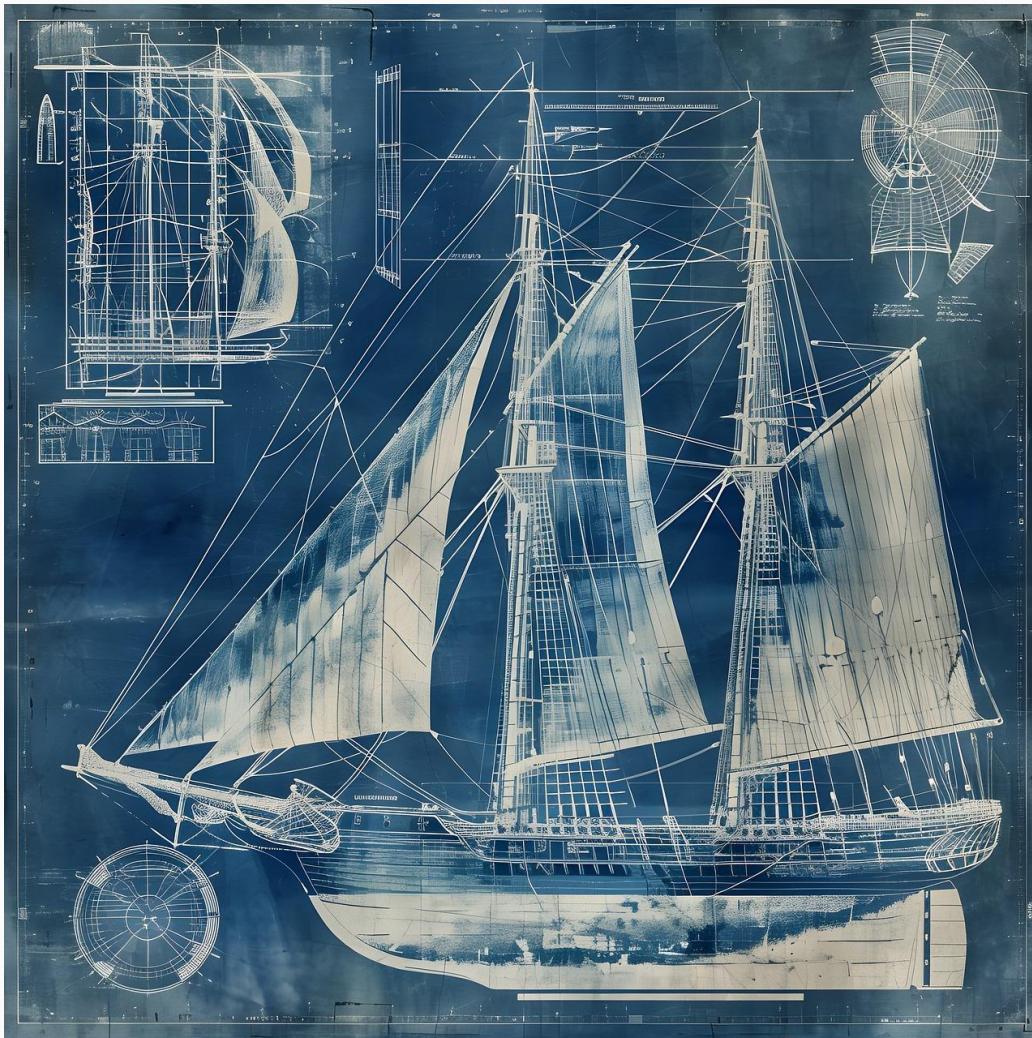
Ex mea dicant docendi, natum prompta an est. Ius ei autem reprehendunt, velit detracto mei ad, at probo recteque cum. Eam no reque graece, enim agam sale ea per. Etiam deterruisset ad est. Eam cibo accusamus intellegat in.

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3120 W Cholla St Phoenix, AZ 85029-4113



Don't Repeat Yourself: Rigging



What is Rigging?

A Collection of Components
which Support and Control
what you're doing



Don't Repeat Yourself: Rigging



**Large Processes have
a lot of data!**



Don't Repeat Yourself: Rigging

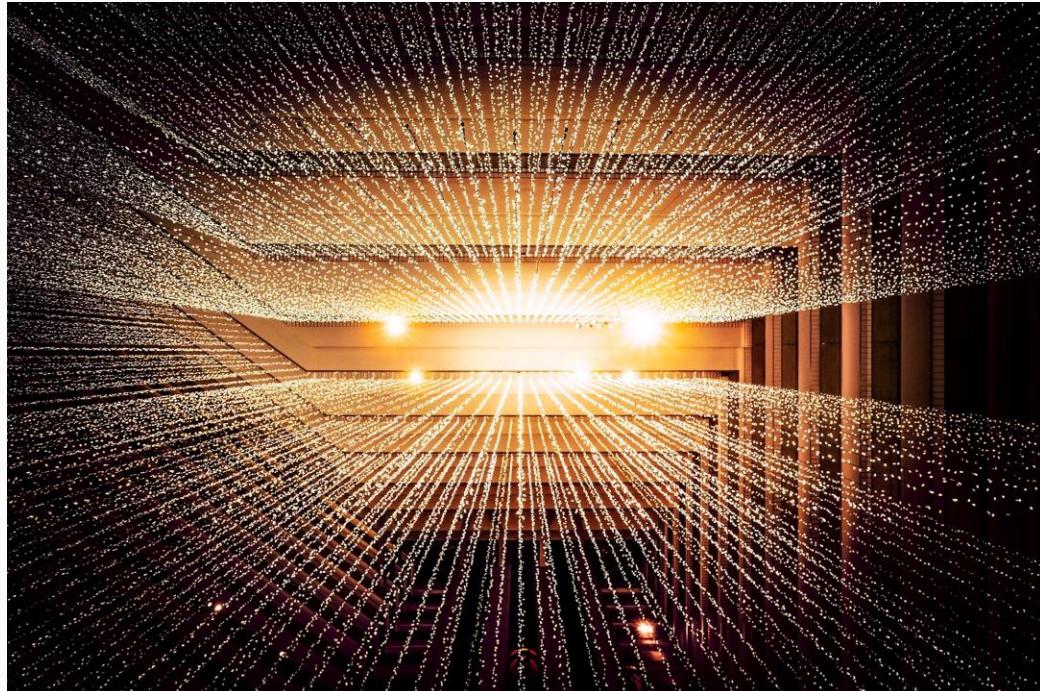


**Large Processes have
a lot of data!**

Rigging gives you a nice way to keep all your data tidy and accessible.



Don't Repeat Yourself: Rigging



Persisted Dataset

- Customizable
- Fast
- Lava-Based



Don't Repeat Yourself: Rigging

```
1  [
2      {% person where:'LastName == "Decker"' %}
3          {% for person in personItems %}
4              {
5                  "NickName": {{ person.NickName | ToJSON }},
6                  "LastName": {{ person.LastName | ToJSON }},
7                  "BaptismDate": {{ person | Attribute:'BaptismDate' | ToJSON }}
8              } {% if forloop.last == false %}, {% endif %}
9          {% endfor %}
10     {% endperson %}
11 ]
```



Don't Repeat Yourself: Rigging

Home CMS Configuration Persisted Datasets Persisted Dataset Detail

Edit Persisted Dataset

Name *: Decker Family Baptism Dates

Active i:

Access Key i *: deckers

Description:
This dataset stores the names and Baptism dates of everyone with the last name of Decker.

Build Script i:

```
1 [ {> person where:'LastName == "Decker"' %}
2   {> for person in personItems %}
3     {
4       "NickName": {{ person.NickName | ToJSON }},
5       "LastName": {{ person.LastName | ToJSON }},
6       "BaptismDate": {{ person | Attribute:'BaptismDate' | ToJSON }}
7     } {> if forloop.last == false %},% endif %
8   {> endfor %}
9   {> endperson %}
10 }
11 ]
```



Don't Repeat Yourself: Rigging

Build Script ⓘ

```
1 [  
2   {% person where:'LastName == "Decker" %}  
3     {% for person in personItems %}  
4       {  
5         "NickName": {{ person.NickName | ToJSON }},  
6         "LastName": {{ person.LastName | ToJSON }},  
7         "BaptismDate": {{ person | Attribute:'BaptismDate' | ToJSON }}  
8       } {% if forloop.last == false %},{% endif %}  
9     {% endfor %}  
10    {% endperson %}  
11 ]
```

Enabled Lava Commands

All
 Adaptive Message
 Cache
 Calendar Events
 Event Scheduled Instance

Execute
 Interaction Content Channel Item Write
 Interaction Intent Write
 Interaction Write
 Observe

Rock Entity
 Search
 Sql
 Web Request
 Workflow Activate

Refresh Interval ⓘ

8.00 hour(s)

Entity Type ⓘ

▼

Memory Cache Duration ⓘ

8.00 hour(s)

Allow Manual Refresh ⓘ

Expires on ⓘ

▼

Save **Cancel**



Don't Repeat Yourself: Rigging

Persisted Dataset Preview

Preview the Dataset JSON X

Time to build Dataset: 256ms

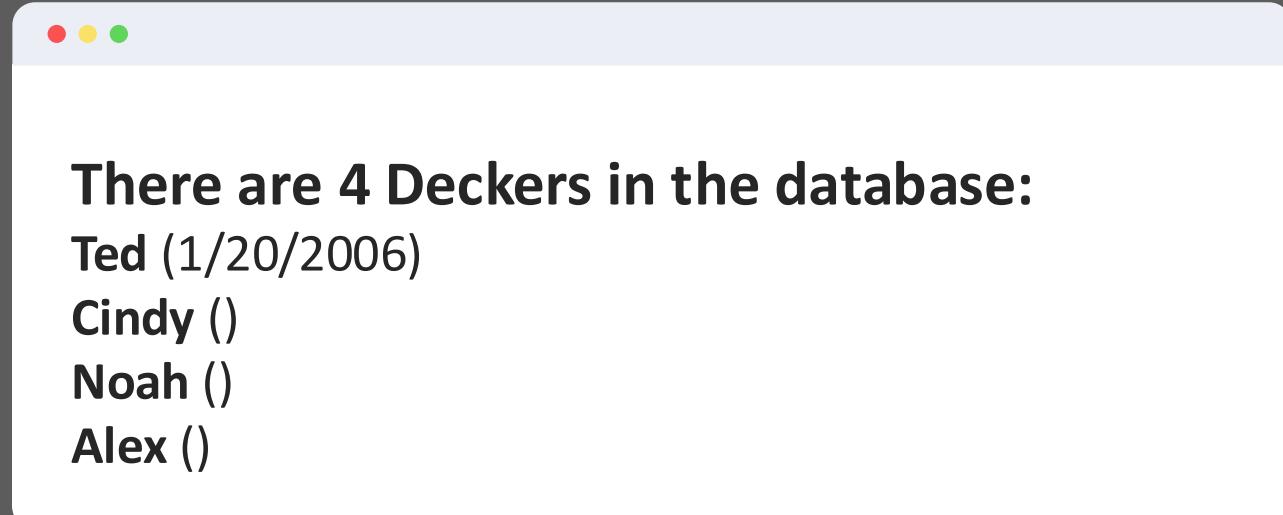
Build Script output

```
[  
  {  
    "NickName": "Ted",  
    "LastName": "Decker",  
    "BaptismDate": "1/12/2006"  
  },  
  {  
    "NickName": "Cindy",  
    "LastName": "Decker",  
    "BaptismDate": ""  
  },  
  {  
    "NickName": "Noah",  
    "LastName": "Decker",  
    "BaptismDate": ""  
  },  
  {  
    "NickName": "Alex",  
    "LastName": "Decker",  
    "BaptismDate": ""  
  }]
```



Don't Repeat Yourself: Rigging

```
1  {% assign people = 'deckers' | PersistedDataset %}  
2  <h1>There are {{ people | Size }} Deckers in the database:</h1>  
3  {% for person in people %}  
4    <p><strong>{{ person.NickName }}</strong> ({{ person.BaptismDate }})</p>  
5  {% endfor %}
```





Don't Repeat Yourself: Rigging

Using Persisted
Datasets is FAST!





Don't Repeat Yourself: Rigging

Your Event



Event



Registration



Group



Content



Deadlines



Don't Repeat Yourself: Rigging

Rock Solid

Life to the Full!

OUR NEXT STUDENTS RETREAT IS SEPTEMBER 14, 2024

[Register Now](#) [Learn more](#)



Don't Repeat Yourself: Rigging

```
1 <div>
2   <h1>
3     Life to the Full!
4     <small>Our next Students Retreat is September 14, 2024</small>
5   </h1>
6 </div>
7
8 <a href="/register/studentretreatfall24" class="btn btn-primary"> Register Now </a>
```



Don't Repeat Yourself: Rigging

```
1  {% assign eventItemId = 4 %}  
2  {% assign callToAction = 'Register Now' %}  
3  /- ----- -/  
4  {% eventitemoccurrence  
5      where:'EventItemId == "{{ eventItemId }}"'  
6      && NextStartTime > "{{ 'Now' | Date:'yyyy-MM-dd' }}"  
7      order:'NextStartTime'  
8      limit:'1'  
9  %}  
10  {% assign nextDate = eventitemoccurrenceItems[0].NextStartTime %}  
11  {% assign linkageSlug = eventitemoccurrenceItems[0].Linkages[0].UrlSlug %}  
12  {% endeventitemoccurrence %}  
13  
14  <div>  
15    <h1>  
16      Life to the Full!  
17      <small>Our next Students Retreat is {{ nextDate | Date:'MMMM d, yyyy' }}</small>  
18    </h1>  
19  </div>  
20  
21  <a href="/register/{{ linkageSlug }}" class="btn btn-primary"> {{ callToAction }} </a>
```



Don't Repeat Yourself: Rigging

```
1  {% assign rigging = StudentRetreatRigging | PersistedDataset %}  
2  
3  <div>  
4    <h1>  
5      Life to the Full!  
6      <small>Our next Students Retreat is {{ rigging.Event.DateFormatted }}</small>  
7    </h1>  
8  </div>  
9  
10 <a href="/register/{{ rigging.Event.UrlSlug }}" class="btn btn-primary"> {{ rigging.CallToAction }} </a>
```



Don't Repeat Yourself: Rigging

```
1  {% assign eventItemId = 4 %}  
2  {% assign callToAction = 'Register Now' %}  
3  
4  /- ----- -/  
5  
6  {  
7    "CallToAction": {{ callToAction | ToJSON }},  
8    "Event": {  
9      {% eventitem id:'{{ eventItemId }}' %}  
10        "EventItemId": {{ eventitem.Id | ToJSON }},  
11        "Description": {{ eventitem.Description | ToJSON }},  
12        "Name": {{ eventItem.Name | ToJSON }},  
13        {% endeventitem %}  
14  
15        {% eventitemoccurrence  
16          where:'EventItemId == "{{ eventItemId }}"  
17            && NextStartTime > "{{ 'Now' | Date:'yyyy-MM-dd' }}"'  
18          order:'NextStartTime'  
19          limit:'1'  
20        %}  
21        {% assign occurrence = eventitemoccurrenceItems[0] %}  
22        "Date": {{ occurrence.NextStartTime | ToJSON }},  
23        "DateFormatted": {{ occurrence.NextStartTime | Date:'MMMM d, yyyy' | ToJSON }},  
24        "UrlSlug": {{ occurrence.Linkages[0].UrlSlug | ToJSON }},  
25        "ContactEmail": {{ occurrence.ContactEmail | ToJSON }}  
26        {% endeventitemoccurrence %}  
27    }  
28 }
```



Don't Repeat Yourself: Rigging

Preview the Dataset JSON

X

Time to build Dataset: 32ms

Build Script output

```
{  
  "CallToAction": "Register Now",  
  "Event": {  
    "EventItemId": 4,  
    "Description": "Lorem Ipsum Dolor",  
    "Name": "Warrior Youth Event",  
    "Date": "2024-09-14T18:00:00-07:00",  
    "DateFormatted": "September 14, 2024",  
    "UrlSlug": "studentretreatfall124",  
    "ContactEmail": "info@rocksolidchurchdemo.com"  
  }  
}
```

OK



Don't Repeat Yourself: Rigging

```
1  {% assign rigging = StudentRetreatRigging | PersistedDataset %}  
2  
3  <div>  
4    <h1>  
5      Life to the Full!  
6      <small>Our next Students Retreat is {{ rigging.Event.DateFormatted }}</small>  
7    </h1>  
8  </div>  
9  
10 <a href="/register/{{ rigging.Event.UrlSlug }}" class="btn btn-primary">{{ rigging.CallToAction }} </a>
```

```
{  
  "CallToAction": "Register Now",  
  "Event": {  
    "EventItemId": 4,  
    "Description": "Lorem Ipsum Dolor",  
    "Name": "Warrior Youth Event",  
    "Date": "2024-09-14T18:00:00-07:00",  
    "DateFormatted": "September 14, 2024",  
    "UrlSlug": "studentretreatfall24",  
    "ContactEmail": "info@rocksolidchurchdemo.com"  
  }  
}
```



Don't Repeat Yourself: Rigging

```
1  {% assign rigging = StudentRetreatRigging | PersistedDataset %}  
2  
3  <div>  
4    <h1>  
5      Life to the Full!  
6      <small>Our next Students Retreat is {{ rigging.Event.DateFormatted }}</small>  
7    </h1>  
8  </div>  
9  
10 <a href="/register/{{ rigging.Event.UrlSlug }}" class="btn btn-primary">{{ rigging.CallToAction }} </a>
```

```
{  
  "CallToAction": "Register Now",  
  "Event": {  
    "EventItemId": 4,  
    "Description": "Lorem Ipsum Dolor",  
    "Name": "Warrior Youth Event",  
    "Date": "2024-09-14T18:00:00-07:00",  
    "DateFormatted": "September 14, 2024",  
    "UrlSlug": "studentretreatfall24",  
    "ContactEmail": "info@rocksolidchurchdemo.com"  
  }  
}
```





Don't Repeat Yourself: Rigging

```
1  {% assign groupId = 1245 %}  
2  
3  ...  
4  
5  {% assign group = groupId | GroupById %}  
6  
7  "Group": {  
8      "Id": {{ group.Id | ToJSON }},  
9      "Name": {{ group.Name | ToJSON }},  
10     "CampusName": {{ group.Campus.Name | ToJSON }},  
11     "MemberCount": {{ group.Members | Size | ToJSON }},  
12     "Members": {{ group.Members | ToJSON }}  
13 }
```



Don't Repeat Yourself: Rigging

```
1  {% assign eventItemId = 4 %}
2  {% assign callToAction = 'Register Now' %}
3  {% assign groupId = 1245 %}
4
5  /- -----
6
7  {
8      "CallToAction": {{ callToAction | ToJSON }},
9      "Event": {
10          {% eventitem id:'{{ eventItemId }}' %}
11          "EventItemId": {{ eventitem.Id | ToJSON }},
12          "Description": {{ eventitem.Description | ToJSON }},
13          "Name": {{ eventItem.Name | ToJSON }},
14          {% endeventitem %}
15
16          {% eventitemoccurrence
17              where:'EventItemId == "{{ eventItemId }}"
18                  && NextStartTime > "{{ 'Now' | Date:'yyyy-MM-dd' }}"
19              order:'NextStartTime'
20              limit:'1'
21          %}
22          {% assign occurrence = eventitemoccurrenceItems[0] %}
23          "Date": {{ occurrence.NextStartTime | ToJSON }},
24          "DateFormatted": {{ occurrence.NextStartTime | Date:'MMMM d, yyyy' | ToJSON }},
25          "UrlSlug": {{ occurrence.Linkages[0].UrlSlug | ToJSON }},
26          "ContactEmail": {{ occurrence.ContactEmail | ToJSON }}
27          {% endeventitemoccurrence %}
28      },
29
30      {% assign group = groupId | GroupById %}
31      "Group": {
32          "Id": {{ group.Id | ToJSON }},
33          "Name": {{ group.Name | ToJSON }},
34          "CampusName": {{ group.Campus.Name | ToJSON }},
35          "MemberCount": {{ group.Members | Size | ToJSON }},
36          "Members": {{ group.Members | ToJSON }}
37      }
38 }
```



Don't Repeat Yourself: Rigging

```
1  {% assign eventItemId = 4 %}  
2  {% assign callToAction = 'Register Now' %}  
3  {% assign groupId = 1245 %}  
4  
5  /- ----- -/  
6
```



Don't Repeat Yourself: Rigging

```
    }
7  {
8  "CallToAction": {{ callToAction | ToJSON }},
9  "Event": {
10     {% eventitem id:'{{ eventItemId }}' %}
11     "EventItemId": {{ eventitem.Id | ToJSON }},
12     "Description": {{ eventitem.Description | ToJSON }},
13     "Name": {{ eventItem.Name | ToJSON }},
14     {% endeventitem %}

15
16     {% eventitemoccurrence
17     where:'EventItemId == "{{ eventItemId }}"
18         && NextStartTime > "{{ 'Now' | Date:'yyyy-MM-dd' }}"
19     order:'NextStartTime'
20     limit:'1'
21     %}
22     {% assign occurrence = eventitemoccurrenceItems[0] %}
23     "Date": {{ occurrence.NextStartTime | ToJSON }},
24     "DateFormatted": {{ occurrence.NextStartTime | Date:'MMMM d, yyyy' | ToJSON }},
25     "UrlSlug": {{ occurrence.Linkages[0].UrlSlug | ToJSON }},
26     "ContactEmail": {{ occurrence.ContactEmail | ToJSON }}
27     {% endeventitemoccurrence %}
28 },
29 }
```



Don't Repeat Yourself: Rigging

```
29  
30      {% assign group = groupId | GroupById %}  
31      "Group": {  
32          "Id": {{ group.Id | ToJSON }},  
33          "Name": {{ group.Name | ToJSON }},  
34          "CampusName": {{ group.Campus.Name | ToJSON }},  
35          "MemberCount": {{ group.Members | Size | ToJSON }},  
36          "Members": {{ group.Members | ToJSON }}  
37      }  
38  }
```



Don't Repeat Yourself: Rigging

Student Retreat Rigging

```
{  
    CallToAction: "Register Now",  
    + Event: { ... },  
    + Group: { ... },  
    + Registration: { ... },  
    + Content: { ... },  
    + Locations: { ... },  
    + Deadlines: { ... },  
}
```



Code Smell

Training your sense of what “good” code is.

“Any fool can write code that a computer can understand.
Good programmers write code that humans can understand”.



Martin Fowler





Code Smell

Warning signs that may:

- Make the code less clear.
- Be harder to maintain in the future.
- Indicate deeper issues, or introduce opportunities for unintended consequences.





Code Smell

Calendar Watch

Hello Brian ▾

```
1  {% assign families = person | Groups:'10' | Map:'Group' %}  
2  {% assign familyCount = families | Size %}  
3  <!-- {{ families | Size }} families -->  
4  
5  {% assign people = '' %}  
6  {% for family in families %}  
7    <!-- {{ family.Members | Size }} members in {{ family.Name }}-->  
8    {% for member in family.Members %}  
9      {% assign people = people | AddToArray:member.Person %}  
10   {% endfor %}  
11  {% endfor %}  
12  
13  {% assign people = people | Uniq | OrderBy:'Age desc' %}  
14  <!-- {{ people | ToJSON }} -->  
15  
16  <h4>Everyone in your {{ 'family' | PluralizeForQuantity:familyCount }}:</h4>  
17  {{ people | Map:'FullName' | Join:', ' }}
```

Everyone in your families:

Ben Jones, Jim Simmons, Sarah Simmons, Brian Jones

[Account Info](#)

[Change Password](#)

[Groups](#)

No Groups Available To List



Code Smell

Calendar Watch Hello Brian ▾

```
1  {% assign families = person | Groups:'10' | Map:'Group' %}  
2  {% assign familyCount = families | Size %}  
3  <!-- {{ families | Size }} families -->  
4  
5  {% assign people = '' %}  
6  {% for family in families %}  
7    <!-- {{ family.Members | Size }} members in {{ family.Name }}-->  
8    {% for member in family.Members %}  
9      {% assign people = people | AddToArray:member.Person %}  
10   {% endfor %}  
11  {% endfor %}  
12  
13  {% assign people = people | Uniq | OrderBy:'Age desc' %}  
14  <!-- {{ people | ToJSON }} -->  
15  
16  <h4>Everyone in your {{ 'family' | PluralizeForQuantity:familyCount }}:</h4>  
17  {{ people | Map:'FullName' | Join:', ' }}
```

```
<div class="block-content">

2 families -->  
2 members in Jones Family-->  
3 members in Simmons Family-->  
[  
{  
  "ConnectionStatusValue": {  
    "Category": null,  
    "IsSystem": true,  
    "DefinedTypeId": 4,  
    "Order": 0,  
    "Value": "Member",  
    "Description": "Applied to completed all requirements established by member.",  
    "IsActive": true,  
    "CategoryId": null,  
    "CategoryName": "",  
    "CreatedDateTime": null,  
    "ModifiedDateTime": null,  
    "CreatedByPersonAliasId": null,  
    "ModifiedByPersonAliasId": null  
  }  
}


```



Code Smell

```
1 <div class="panel">
2 <div class="panel-heading">
3 <h3 class="panel-title">Sample Panel</h3>
4 </div>
5 <div class="panel-body">
6 <strong>{{ Group.Name }}</strong>
7 {{ Group.Description }}
8 </div>
9 <div class="panel-footing text-right">
10 <a class="btn btn-primary btn-xs">Join</a>
11 </div>
```





Code Smell

```
1 <div class="panel">
2     <div class="panel-heading">
3         <h3 class="panel-title">Sample Panel</h3>
4     </div>
5     <div class="panel-body">
6         <strong>{{ Group.Name }}</strong>
7         {{ Group.Description }}
8     </div>
9     <div class="panel-footing text-right">
10        <a class="btn btn-primary btn-xs">Join</a>
11    </div>
12 </div>
```





Code Smell

```
1  {% assign memberships = CurrentPerson | Groups:'25' %}{% for m in memberships %}{% if m.GroupMemberStatus == 1 %}
2  {{ m.Group.Name }} (Active){% else %}{{ m.Group.Name }} (Not Active){% endfor %}
```

Lava Error: '{% endif %}' was expected at (2:65)

Source:

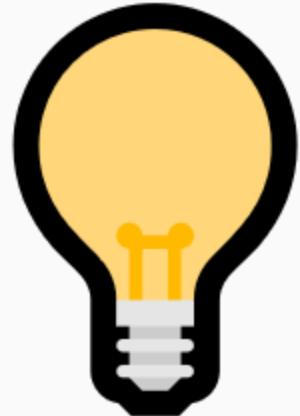
```
{{ m.Group.Name }} (Active){% else %}{{ m.Group.Name }} (Not Active){% endfor %}
```





Code Smell

```
1  {% assign memberships = CurrentPerson | Groups:'25' %}  
2  {% for m in memberships %}  
3      {% if m.GroupMemberStatus == 1 %}  
4          {{ m.Group.Name }} (Active)  
5      {% else %}  
6          {{ m.Group.Name }} (Not Active)  
7      {% endif %}  
8  {% endfor %}
```





Code Smell

Code smell applies to more than just formatting though.

Check your solutions for a smell by making sure you're not working too hard to undo a mistake you haven't found yet, or over-engineering the solution.





Code Smell

```
1 <h1>Verses about Love:</h1>
2 <div class="row">
3   <div class="col-md-4 well">
4     Anyone who does not love does not know God, because God is love.
5   </div>
6   <div class="col-md-4 well">
7     And above all these put on love, which binds everything together in perfect harmony.
8   </div>
9   <div class="col-md-4 well">
10    So now faith, hope, and love abide, these three; but the greatest of these is love.
11  </div>
12 </div>
```

Rock Solid Church Demo

New Here? Resources Connect Give Blog Calendar Watch Hello Admin ▾

Verses about Love:

Anyone who does not love does not know God, because God is love.

And above all these put on love, which binds everything together in perfect harmony.

So now faith, hope, and love abide, these three; but the greatest of these is love.



Code Smell

```
1 <h1>Verses about Love:</h1>
2 <div class="row">
3     <div class="col-md-4 well mx-3">
4         Anyone who does not love does not know God, because God is love.
5     </div>
6     <div class="col-md-4 well mx-3">
7         And above all these put on love, which binds everything together in perfect harmony.
8     </div>
9     <div class="col-md-4 well mx-3">
10        So now faith, hope, and love abide, these three; but the greatest of these is love.
11    </div>
12 </div>
```

Verses about Love:

Anyone who does not love does not know God, because God is love.

And above all these put on love, which binds everything together in perfect harmony.

So now faith, hope, and love abide, these three; but the greatest of these is love.



Code Smell

If you find yourself fighting
against the tools, there's
probably a better way.





Code Smell

```
1 <h1>Verses about Love:</h1>
2 <div class="row">
3     <div class="col-md-4">
4         <div class="well">
5             Anyone who does not love does not know God, because God is love.
6         </div>
7     </div>
8     <div class="col-md-4">
9         <div class="well">
10            And above all these put on love, which binds everything together in perfect harmony.
11        </div>
12    </div>
13    <div class="col-md-4">
14        <div class="well">
15            So now faith, hope, and love abide, these three; but the greatest of these is love.
16        </div>
17    </div>
18 </div>
```

Verses about Love:

Anyone who does not love does not know God, because God is love.

And above all these put on love, which binds everything together in perfect harmony.

So now faith, hope, and love abide, these three; but the greatest of these is love.



Code Smell

```
1  {% assign memberships = CurrentPerson | Groups:'25' %}  
2  {% for member in memberships %}  
3    {% assign person = member.Person.PrimaryAlias | PersonByAlias %}  
4    {{ person.FullName }} is a member of {{ member.GroupId | GroupById | Property:'Name' }}  
5  {% endfor %}
```

Since so many entities are linked together, there are frequently multiple ways to get information.

Make sure you're using the most efficient route.

The screenshot shows the Rock Model Map interface. At the top, a grid of icons represents different entity categories: Check-in, CMS, Communication, Core, CRM, Engagement, Event, Finance, Group (which is highlighted with a dark gray background), LMS, Meta, Prayer, Reporting, Web Farm, Workflow, and Other. Below this is a detailed view for the 'Group' model. It includes sections for 'Group Models' (listing Group, Group Demographic Type, Group Demographic Value, Group Historical, and Group Location) and 'Model Details' (with a 'Filter Options' dropdown, a 'Show: Methods' checkbox, and a description: 'Represents a member of a group in Rock. A group member is a Person who has a relationship with a Group.').



Code Smell

A process can have a smell too, if there are too many “moving pieces”.

Joints are always the weakest part of an assembly.





Code Smell

I need a dataview

That will be used by a job

To create Connection Requests

To automatically launch a workflow

That will update a person's attribute.





Code Smell

I need a dataview

That will be used by a job

To create Connection Requests

To automatically launch a workflow

That will update a person's attribute.





Elegance



Raptor 1 Engine



Raptor 2 Engine



Raptor 3 Engine



Elegance

Limit Abstraction Layers





Elegance

```
1 [  
2   "MainCampus": {  
3     "WeeklyAttendance": "<div class='col-md-3'><strong>Weekly Total</strong> 2403</div>",  
4     "AttendanceAverage": "<div class='col-md-3'><strong>YTD Average</strong> 3850</div>",  
5     "WeeklyGiving": "<div class='col-md-3'><strong>Weekly Giving</strong> $7,209.31</div>",  
6     "GivingAverage": "<div class='col-md-3'><strong>Giving Average</strong> $6,950.02</div>"  
7   },  
8   "SouthCampus": {  
9     "WeeklyAttendance": "<div class='col-md-3'><strong>Weekly Total</strong> 1489</div>",  
10    "AttendanceAverage": "<div class='col-md-3'><strong>YTD Average</strong> 2348</div>"  
11    "WeeklyGiving": "<div class='col-md-3'><strong>Weekly Giving</strong> $2,234.88</div>",  
12    "GivingAverage": "<div class='col-md-3'><strong>Giving Average</strong> $2,000.00</div>"  
13  }  
14 ]
```

```
% assign dashboardData = 'dashboard' | PersistedDataset %}  
1 <div class="row">  
2   {{ dashboardData.MainCampus.WeeklyAttendance }}  
3   {{ dashboardData.MainCampus.AttendanceAverage }}  
4   {{ dashboardData.MainCampus.WeeklyGiving }}  
5   {{ dashboardData.MainCampus.GivingAverage }}  
6 </div>  
7 <div class="row">  
8   {{ dashboardData.SouthCampus.WeeklyAttendance }}  
9   {{ dashboardData.SouthCampus.AttendanceAverage }}  
10  {{ dashboardData.SouthCampus.WeeklyGiving }}  
11  {{ dashboardData.SouthCampus.GivingAverage }}  
12 </div>  
13 </div>
```



Elegance

```
1 [
2   "MainCampus": {
3     "WeeklyAttendance": 2403,
4     "AttendanceAverage": 3850,
5     "WeeklyGiving": "$7,209.31",
6     "GivingAverage": "$6,950.02"
7   },
8   "SouthCampus": {
9     "WeeklyAttendance": 1489,
10    "AttendanceAverage": 2348,
11    "WeeklyGiving": "$2,234.88",
12    "GivingAverage": "$4,239.51"
13 }
14 ]
```

```
1  {% assign dashboardData = 'dashboard' | PersistedDataset %}
2  <div class="row">
3    <div class="col-md-3">{{ dashboardData.MainCampus.WeeklyAttendance }}</div>
4    <div class="col-md-3">{{ dashboardData.MainCampus.AttendanceAverage }}</div>
5    <div class="col-md-3">{{ dashboardData.MainCampus.WeeklyGiving }}</div>
6    <div class="col-md-3">{{ dashboardData.MainCampus.GivingAverage }}</div>
7  </div>
8  <div class="row">
9    <div class="col-md-3">{{ dashboardData.SouthCampus.WeeklyAttendance }}</div>
10   <div class="col-md-3">{{ dashboardData.SouthCampus.AttendanceAverage }}</div>
11   <div class="col-md-3">{{ dashboardData.SouthCampus.WeeklyGiving }}</div>
12   <div class="col-md-3">{{ dashboardData.SouthCampus.GivingAverage }}</div>
13 </div>
```



Elegance

```
1 [  
2   "MainCampus": {  
3     "WeeklyAttendance": 2403,  
4     "AttendanceAverage": 3850,  
5     "WeeklyGiving": "$7,209.31",  
6     "GivingAverage": "$6,950.02"  
7   },  
8   "SouthCampus": {  
9     "WeeklyAttendance": 1489,  
10    "AttendanceAverage": 2348,  
11    "WeeklyGiving": "$2,234.88",  
12    "GivingAverage": "$4,239.51"  
13  }  
14 ]
```

```
1 {% assign dashboardData = 'dashboard' | PersistedDataset %}  
2 [[ kpis ]]  
3   [[ kpi icon:'fa fa-users' title:'Attendance' value:'{{ dashboardData.MainCampus.WeeklyAttendance }}' subtitle:'YTD Average {{ dashboardData.MainCampus.AttendanceAverage }}' ]][[ endkpi ]]  
4   [[ kpi icon:'fa fa-money' title:'Giving' value:'{{ dashboardData.MainCampus.WeeklyGiving }}' subtitle:'YTD Average {{ dashboardData.MainCampus.GivingAverage }}' ]][[ endkpi ]]  
5 [[ endkpis ]]  
6 [[ kpis ]]  
7   [[ kpi icon:'fa fa-users' title:'Attendance' value:'{{ dashboardData.SouthCampus.WeeklyAttendance }}' subtitle:'YTD Average {{ dashboardData.SouthCampus.AttendanceAverage }}' ]][[ endkpi ]]  
8   [[ kpi icon:'fa fa-money' title:'Giving' value:'{{ dashboardData.SouthCampus.WeeklyGiving }}' subtitle:'YTD Average {{ dashboardData.SouthCampus.GivingAverage }}' ]][[ endkpi ]]  
9 [[ endkpis ]]
```