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Hands-on Lab: Looker + Liquid: Advanced Customization Techniques

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Agenda

1. What is Liquid?

2. Why should you use Liquid?

3. Conditional formatting

4. Using control flows

5. Advanced single value viz

What is Liquid?

Liquid is an open-source, Ruby-based template language created by Shopify. It can be used in in conjunction with LookML to build more flexible, dynamic code.

Liquid code is denoted by braces {} and falls into <u>3 different categories</u>:

1. **Objects**: Tell Liquid where to show content on a page

```
dimension: product_image {
  sql: ${product_id} ;;
  html: <img src="http://www.acme.com/product_images/{{ value }}.jpg" /> ;;
}
```

1. **Tags**: Create the logic and control flow for templates

```
label: "{% if _user_attributes['customer'] == 'A' %} Standard Margin
       {% else %} Gross Margin {% endif %}"
```

1. **Filters**: Change the output of a Liquid object

```
{% assign last_filter = part_split_at_sorts | first %}
{% assign user_filters = user_filters | append:'&f' %}
```

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Why should you use Liquid?

- Smart workflows

- Better user experience

- Unleash Looker's full potential

Using Liquid in Looker

There are several places in LookML where Liquid can be used:

- The `action` parameter

- The `html` parameter

- The `label` parameter of a field

- The `link` parameter

- Parameters that begin with sql
  - `sql`
  - `sql_on`
  - `sql_table_name`

A reference sheet for all available liquid variables can be found [here](#).

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Liquid parameters

Referencing LookML objects

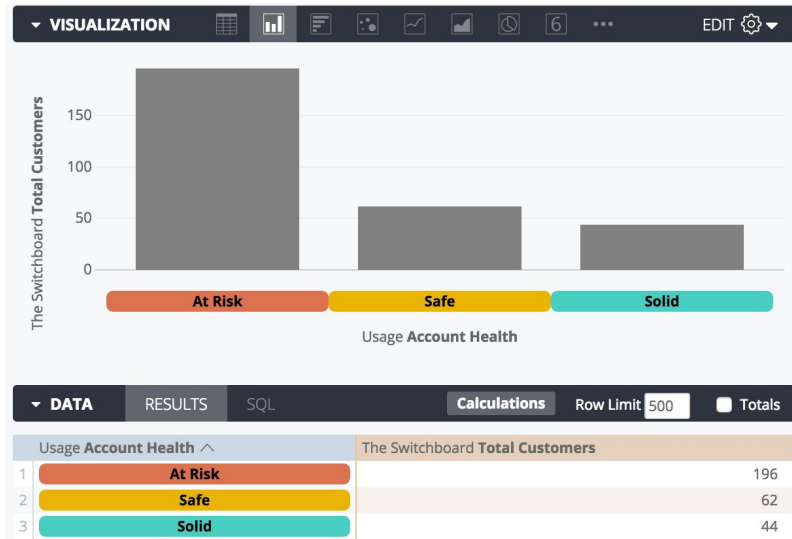| Variable	Definition	Example Output
value	The raw value of the field returned by the database query.	8521935
rendered_value	The value of the field with Looker's default formatting.	$8,521,935.00
filterable_value	The value of the field formatted for use as a filter in a Looker URL.	8521935
link	The URL to Looker's default drill link. Note that some fields will not have any default link.	/explore/thelook/orders?fields=orders.order_amount
linked_value	The value of the field with Looker's default formatting and default linking.	$8,521,935.00
_model._name	The name of the model for this field.	thelook
_view._name	The name of the view for this field.	orders
_explore._name	The name of the Explore for this field.	order_items
_field._name	The name of the field itself.	total_order_amount

Conditional formatting

Conditional formatting

HTML can be used to apply custom formatting to any fields in Looker.

- Add custom colors to dimension labels or header backgrounds
- Include picture or icons as part of displayed values
- Change the size or font of displayed text
- Add custom details via a drop-down into the cell of a table
- Build a progress bar into the cell of a table that compares the cell value against a goal

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Conditional formatting example

```
dimension: account_health {
  sql: ${TABLE}.account_health ;;
  html: {% if value == 'At Risk' %}
      <b><p style="color: black; background-color:
#dc7350; margin: 0; border-radius: 5px;
text-align:center">{{ value }}</p></b>

    {% elsif value == 'Safe' %}
    <b><p style="color: black; background-color:
#e9b404; margin: 0; border-radius: 5px;
text-align:center">{{ value }}</p></b>

    {% else %}
    <b><p style="color: black; background-color:
#49cec1; margin: 0; border-radius: 5px;
text-align:center">{{ value }}</p></b>
    {% endif %}
  ;;
}
```

Conditional formatting example

Changes such as font, size, and color can all be applied in the `html` parameter.

```
measure: total_sale_price {
    type: sum
    value_format_name: usd
    sql: ${sale_price} ;;
    drill_fields: [detail*]
    html: <font size="+5">{{ linked_value
    }}</font> ;;
}
```

Orders Created Year	2014	2015
Orders Created Month Num	Order Items Total Sale Price	Order Items Total Sale Price
1	$52,420.05	$452,882.20
2	$75,952.37	$470,074.48
3	$107,126.84	$550,303.18
4	$125,647.48	$567,885.49
5	$157,792.55	$612,118.65
6	$176,296.54	$664,639.53
7	$208,308.34	$738,711.55
8	$225,887.66	$774,477.23

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Conditional formatting: Buttons

Adding buttons can make it clearer for users to know when they have the option to drill into data.

Orders **User ID**	Orders **History** ∧
1	16	Order History
2	18	Order History
3	85	Order History
4		Order History

Not obviously an option to drill

Orders **User ID**	Orders **History Button** ∨
1	10015	Order History
2	9864	Order History
3	9788	Order History
4	9749	Order History

Screams "Click me!"

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Conditional formatting: Buttons

Adding buttons can make it clearer for users to know when they have the option to drill into data.

```
dimension: history_button {
    sql: ${TABLE}.id ;;
    html: <a href=
"/explore/the_look/order_items?fields=users.id,order_items
.count,orders.created_date,inventory_items.product_id,inve
ntory_items.cost*&f[order_items.order_id]=
{{ value }}"
    ><button>Order History</button></a>;;
}
```

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Control flows

Control flows using `if else` logic

We can use Liquid conditional logic to adjust how fields appear based on the user viewing them. This is particularly useful in a situation where you have two different teams who interpret a field's name differently.

Using the Liquid `if` tag and user attributes, you can set conditional labels:

```
label: "{% if _user_attributes['department'] == 'DepartmentA' %}
                    Label A
        {% elsif _user_attributes['department'] == 'DepartmentB' %}
                    Label B
        {% else %}
                    Label C
        {% endif %}"
```

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Control flows exercise

Our marketing department (using the **Order Items** Explore) refers to the gross margin as a "standard margin," while the sales department (using the **Active Users** Explore) uses the term "operating margin."

Create a label that changes the name of the gross margin measure (in Order_Items view) depending on which department is viewing it.

Control flows exercise

Our marketing department (using the **Order Items** Explore) refers to the gross margin as a "standard margin," while the sales department (using the **Active Users** Explore) uses the term "operating margin." Create a label that changes the name of the gross margin measure depending on which department is viewing it.

```
dimension: gross_margin {
    label: "{% if _explore._name == \"order_items\" %}
                        Standard Margin
            {% elsif _explore._name == \"active_users\" %}
                        Operating Margin
            {% else %} Gross Margin {% endif %}"
    type: number
    value_format_name: usd
    sql: ${sale_price} - ${inventory_items.cost} ;;
}
```

Advanced single value viz (let's combine everything)

Advanced conditional formatting

My business executives want to see a high-level metric that shows the profits (year-to-date) and a ticker that compares to the previous period last year.
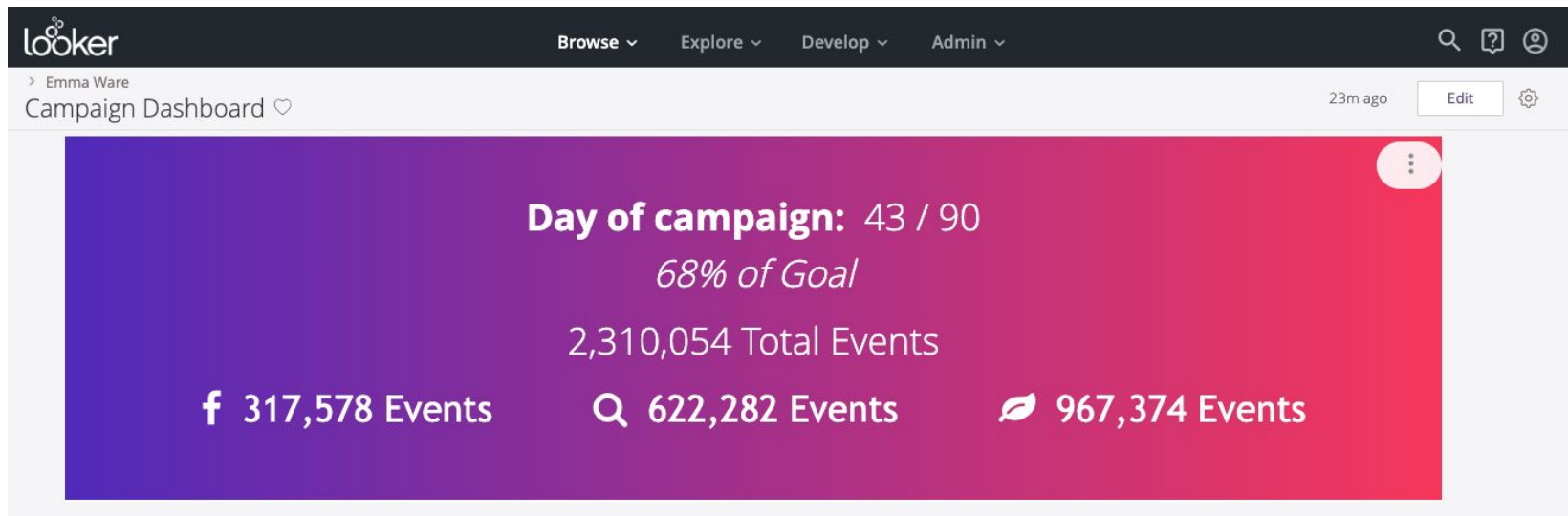
Advanced conditional formatting

```
measure: profit_this_year{
    type: sum
    sql: ${sale_price} ;;
    filters: {
      field: created_year
      value: "this year"
    }
    value_format_name: usd_0
    html:
    <div style="padding: 0px; font-size:16pt"><b>Profit This Year</b></div>
    <div style="padding: 0px; font-size:24pt">{{rendered_value}}</div>
    <div style="padding: 0px; font-size:18pt">
      {% if delta._value > 0 %}
        <font color="green">▲ {{delta._rendered_value}}</font> YoY
        <font size="2">Last Year $$ : {{profit_last_year._rendered_value}}</font>
      {% elsif delta._value < 0 %}
        <font color="red">▼{{delta._rendered_value}}</font> YoY
        <font size="2"> Last Year $$ : {{profit_last_year._rendered_value}}</font>
      {% else %}
      {% endif %}
    </div>
    ;;
  }
```

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Advanced conditional formatting

Advanced conditional formatting

```
measure: custom_single_viz {
    type: count
    html: <div class="vis">
        <div class="vis-single-value" style="font-size:30px; background-image:
linear-gradient(to right, #5A2FC2, #F84066); color:#ffffff">
        <font color="#5A2FC2"><center><b>Day of campaign:</b> 
{{events.day_of_campaign._rendered_value}} / 90 </font>
        <p><em>68% of Goal</em></p>
        <p style="color:#ffffff;">{{ rendered_value }} Total Events </p>
        <p style="float:left; font-family: Trebuchet MS;">
        <i class="fa fa-facebook"> </i>
{{ events.count_events_facebook._rendered_value }} Events
        
        <i class="fa fa-search"> </i> {{ events.count_events_search._rendered_value
}} Events        
        <i class="fa fa-leaf"> </i> {{ events.count_events_organic._rendered_value }}
Events</p></center>
        </div></div> ;; }}
```

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Questions?

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Thank you

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