



**Building a first-party data collection
for GA4, BigQuery, and everything**



[elbwalker/walker.js](#)

The disclaimer

Everything is open source



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elbwalker/walker.js

Expectations **vs.** reality

How data analytics has changed

Event  Destination

Expectations **vs.** reality

How data analytics has changed

Event → Destination



Data infrastructure

How to get from A to Z

Web

Data infrastructure

How to get from A to Z

Web

 Google Ads

 Google
Analytics 4

Data infrastructure

How to get from A to Z

Web

Marketing



Google Ads

Analytics



Google
Analytics4

Data infrastructure

How to get from A to Z

Web



Google Tag Manager

Marketing



Google Ads

Analytics



Google
Analytics 4

Data infrastructure

How to get from A to Z

Clients

Stacks

Destinations

Web



Google Tag Manager

Marketing



Google Ads

Analytics



Google Analytics4

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How to get from A to Z

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Stacks

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Web



Google Tag Manager

Marketing



Google Ads



Meta

Analytics



Google Analytics



SNOWFLOW

PIWIK

PRO

Data infrastructure

How to get from A to Z

Clients

Web

App

Server

Stacks



Google Tag Manager

Destinations

Marketing



Google Ads



Meta

Analytics



Google Analytics



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Google Tag Manager

Destinations

Marketing



Google Ads



Meta

Analytics



Google Analytics 4



SNOWPLOW

PIWIK

PRO

Database



Google
BigQuery



snowflake

Data infrastructure

How to get from A to Z

Clients

Web

App

Server

Stacks



Destinations

Marketing



Analytics



Database



Data infrastructure

How to get from A to Z

Clients

Web

App

Server

Stacks



Destinations

Marketing



Analytics



Database



Data infrastructure

How to get from A to Z

Clients

Web

App

Server

Stacks



Google Tag Manager



Firebase

Destinations

Marketing



Google Ads



Meta

Analytics



Google Analytics 4



SNOWPLOW

PIWIK

PRO

Database



Google
BigQuery



snowflake

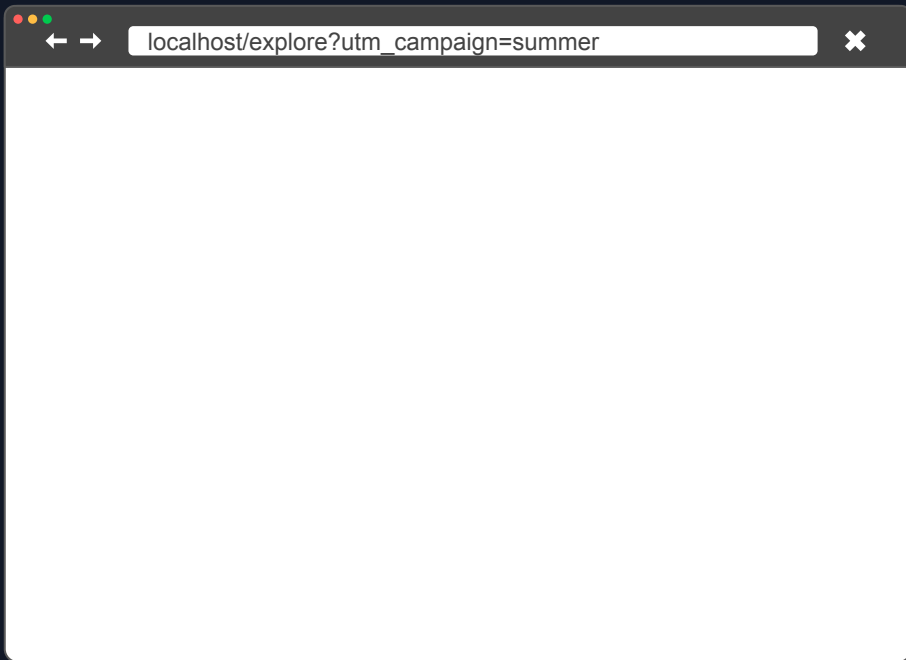
Data collection **interests**

Different people, different interests, but same origin



Data collection **interests**

Different people, different interests, but same origin



**Online
Marketer**

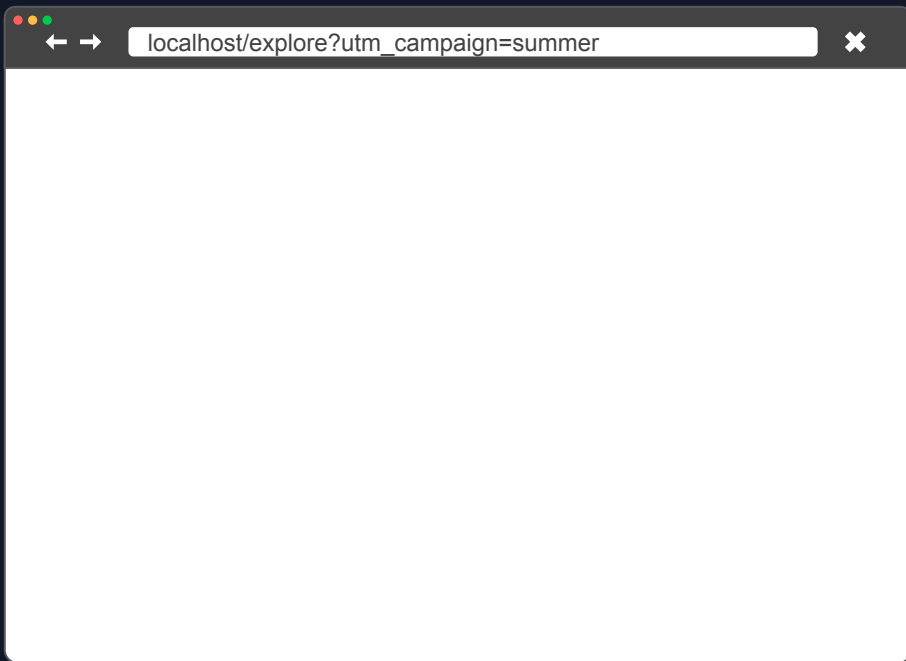
campaign, 3rd party



3rd party

Data collection **interests**

Different people, different interests, but same origin



**Online
Marketer**

campaign, 3rd party



**Data
Governance**

consent, namings



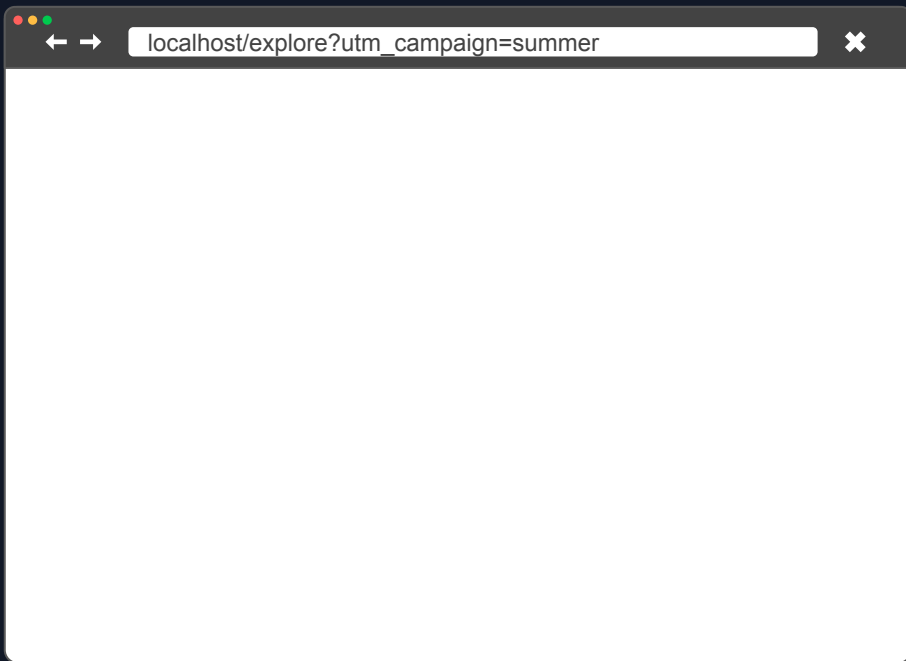
3rd party



consent

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**Online
Marketer**

campaign, 3rd party



**Data
Governance**

consent, namings



**Data
Scientist**

user, config



3rd party



consent



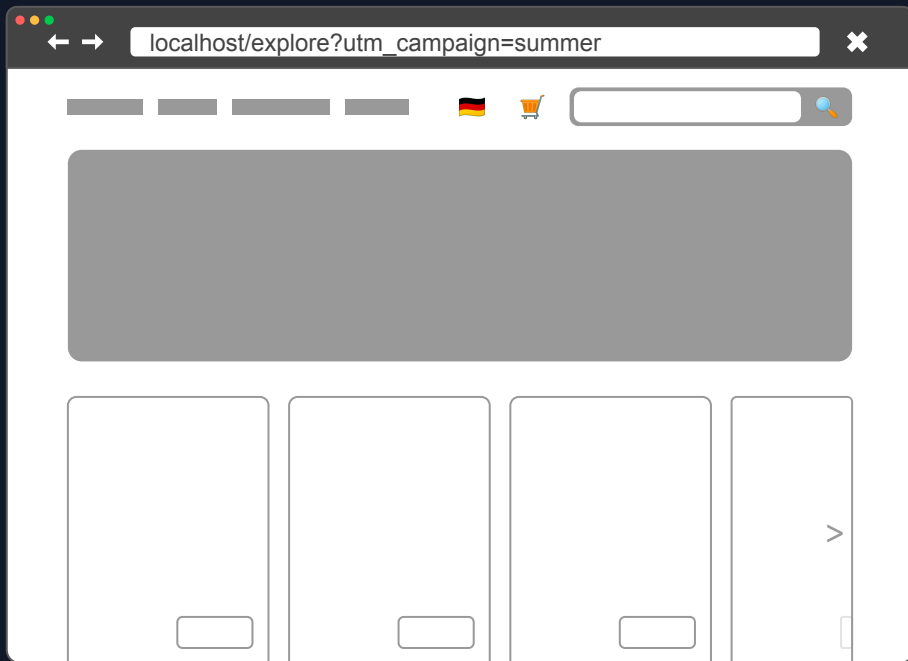
user



config

Data collection **interests**

Different people, different interests, but same origin



3rd party



consent



user



config



**Online
Marketer**

campaign, 3rd party



**Data
Governance**

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**Data
Scientist**

user, config



**Product
Owner**

usage, adoption

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Online Marketer

campaign, 3rd party



Data Governance

consent, namings



Data Scientist

user, config



Product Owner

usage, adoption



Data Analyst

events, content



3rd party



consent



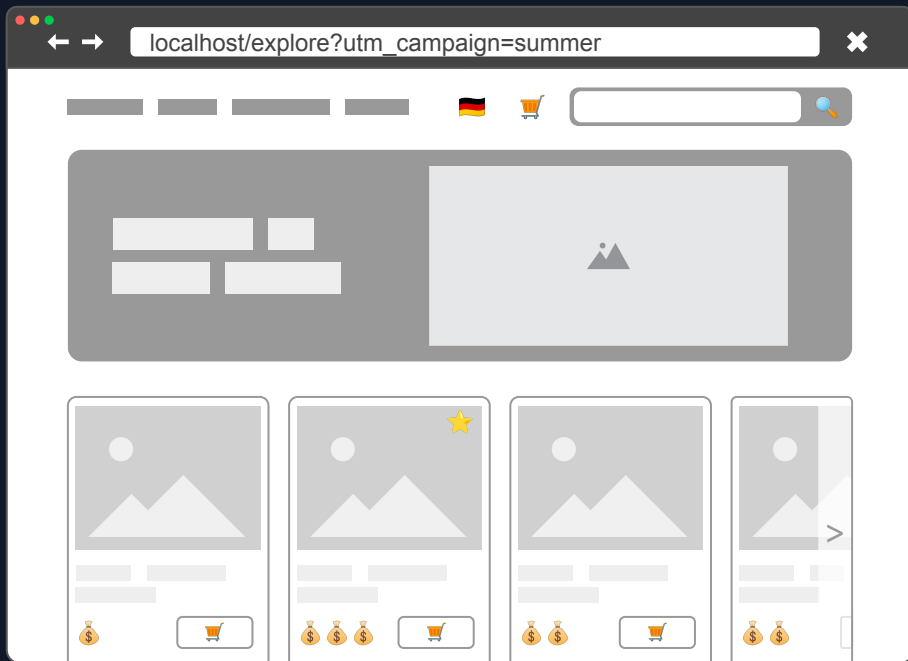
user



config

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3rd party



consent



user



config



Online Marketer

campaign, 3rd party



Data Governance

consent, namings



Data Scientist

user, config



Product Owner

usage, adoption



Data Analyst

events, content

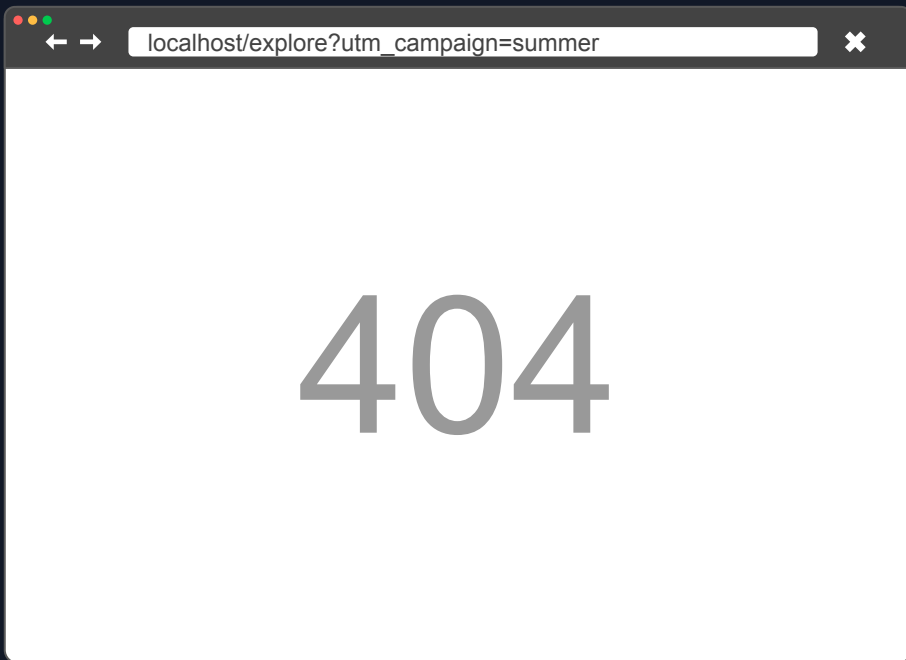


Growth Manager

experiments, behaviour

Data collection **interests**

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3rd party



consent



user



config



Online Marketer

campaign, 3rd party



Data Governance

consent, namings



Data Scientist

user, config



Product Owner

usage, adoption



Data Analyst

events, content



Growth Manager

experiments, behaviour

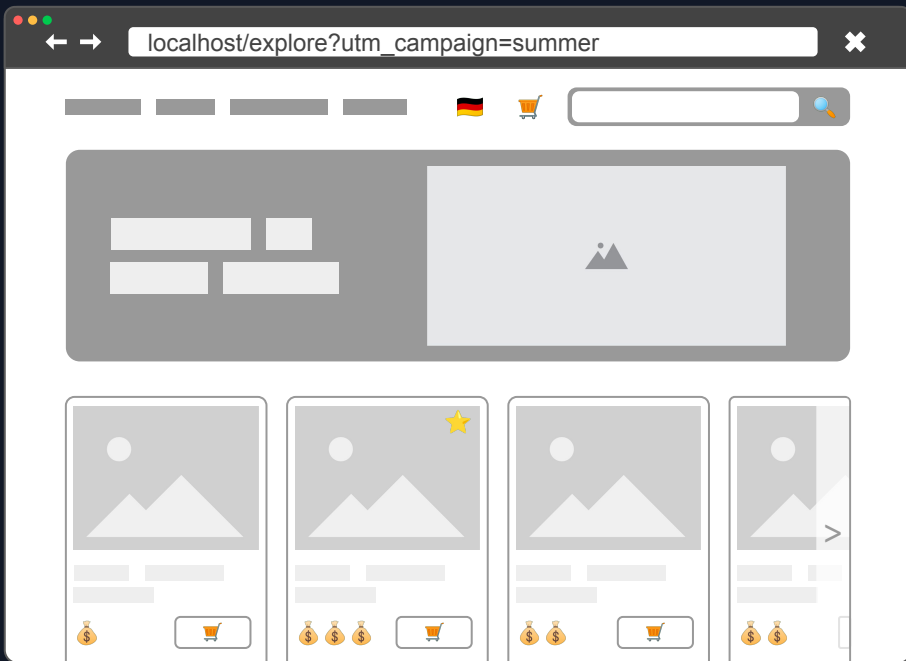


DevOps & Developer

peace of mind

Data collection **interests**

Different people, different interests, but same origin



3rd party



consent



user



config



Online Marketer

campaign, 3rd party



Data Governance

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events, content



Growth Manager

experiments, behaviour

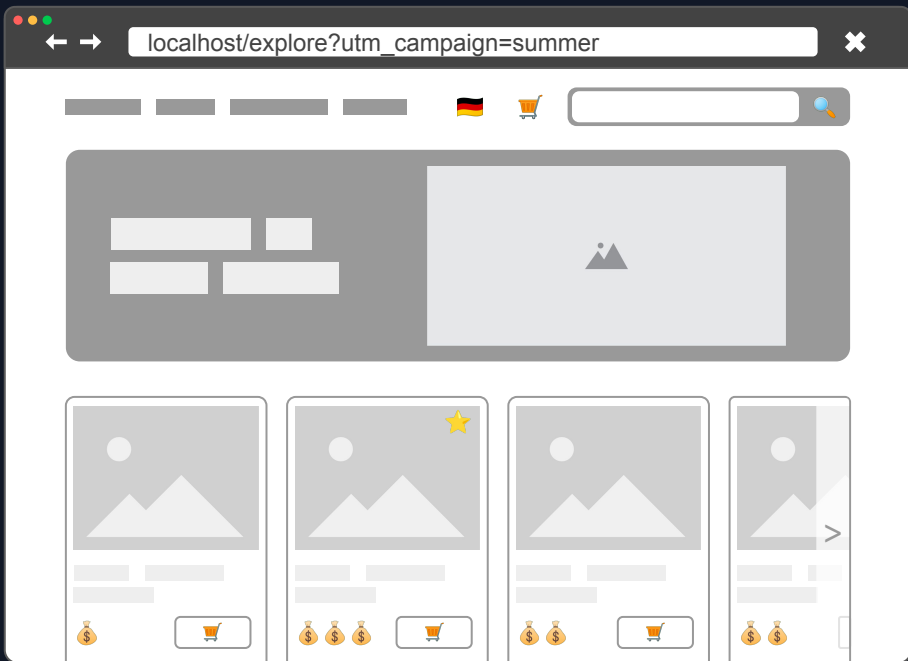


DevOps & Developer

peace of mind

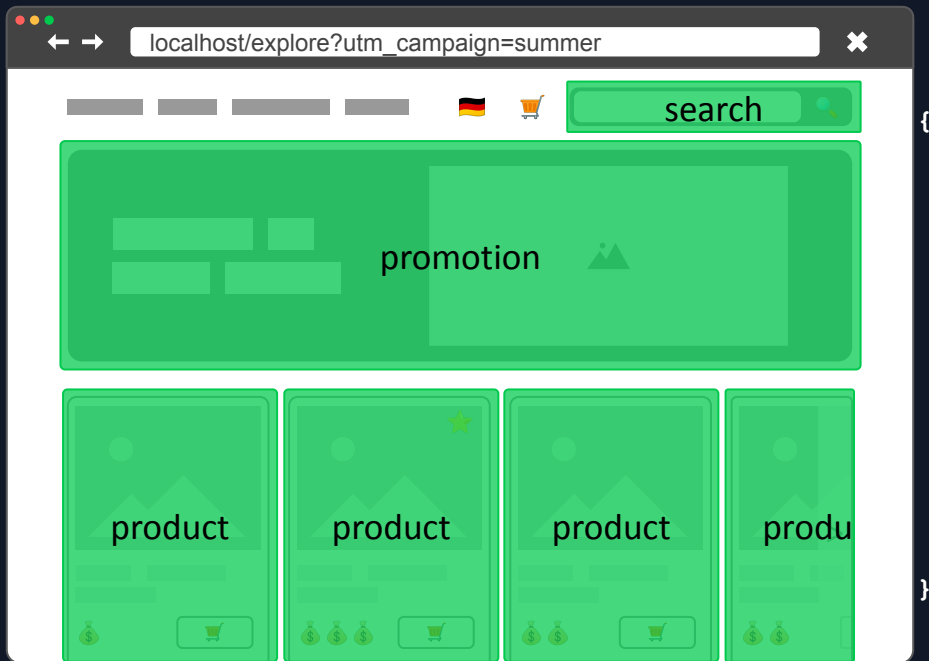
Generic event structure

Exemplary on a website



Generic event structure

Exemplary on a website



Generic event structure

Exemplary on a website

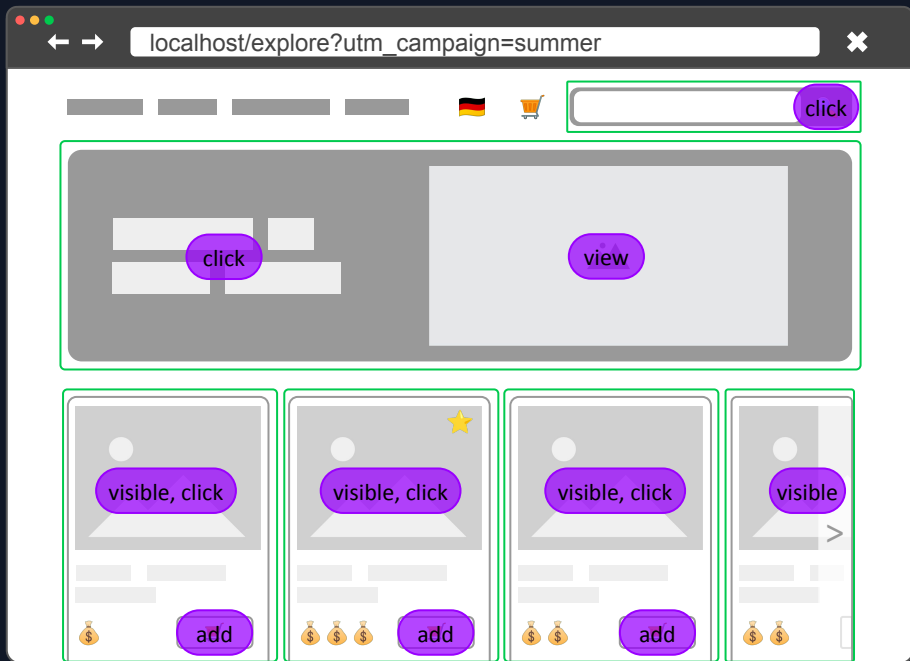


```
{  
  entity: "promotion",  
}
```

Entity

Generic event structure

Exemplary on a website

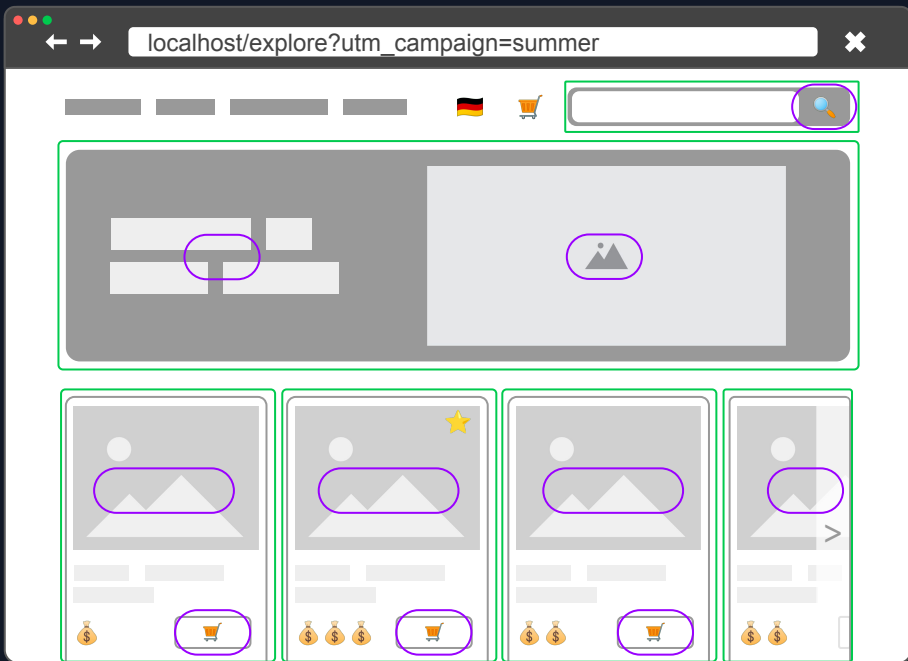


```
{  
  entity: "promotion",  
}
```

Entity

Generic event structure

Exemplary on a website



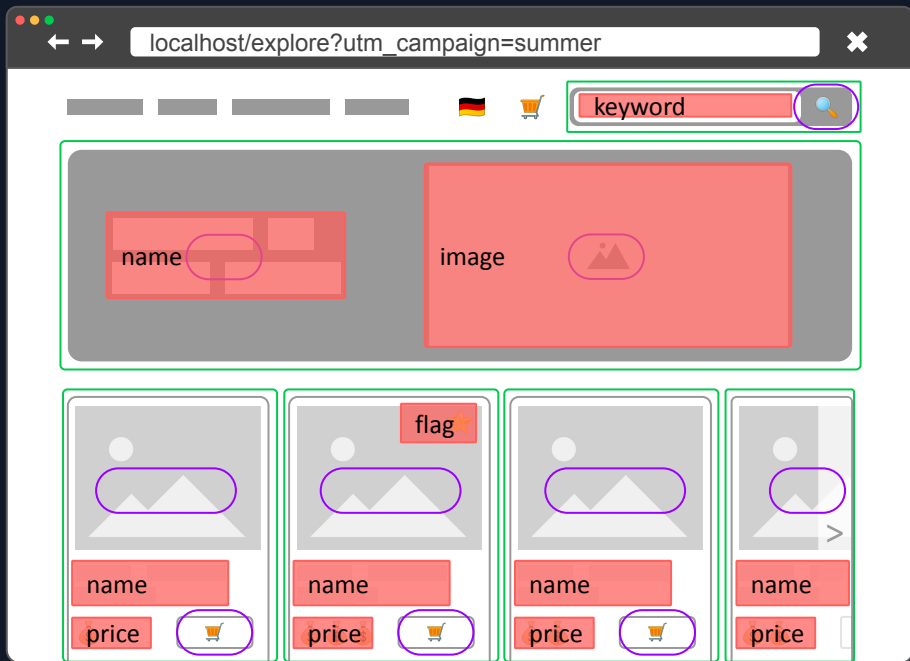
```
{  
  entity: "promotion",  
  action: "view",  
}
```

Entity

Action

Generic event structure

Exemplary on a website

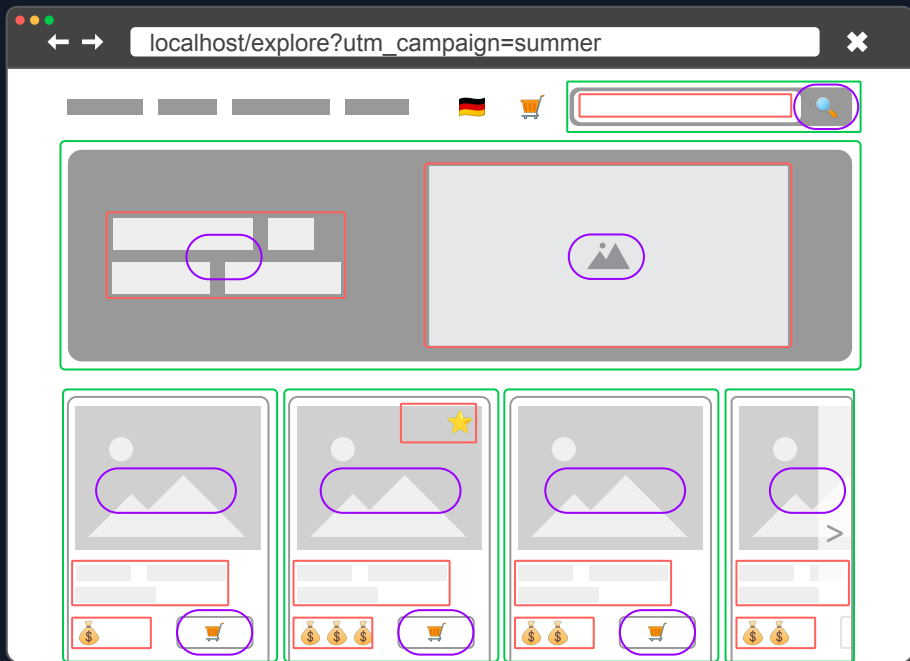


Entity

Action

Generic event structure

Exemplary on a website



```
{  
  entity: "promotion",  
  action: "view",  
  data: {  
    name: "Setting up ...",  
    category: "analytics"  
  },  
}
```

Entity

Property

Action

Generic event structure

Exemplary on a website



```
{  
  entity: "promotion",  
  action: "view",  
  data: {  
    name: "Setting up ...",  
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  },  
}
```

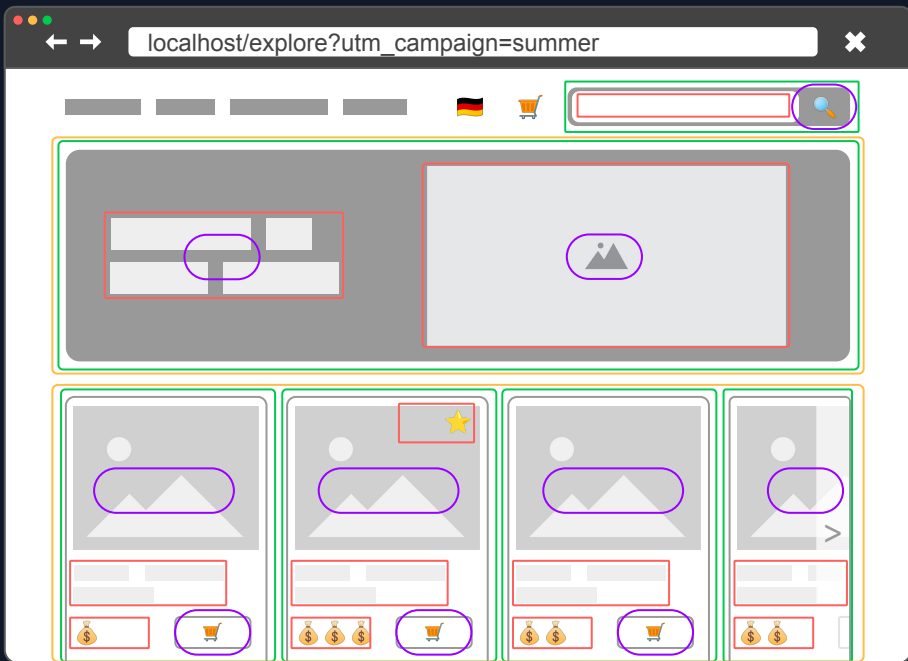
Entity

Property

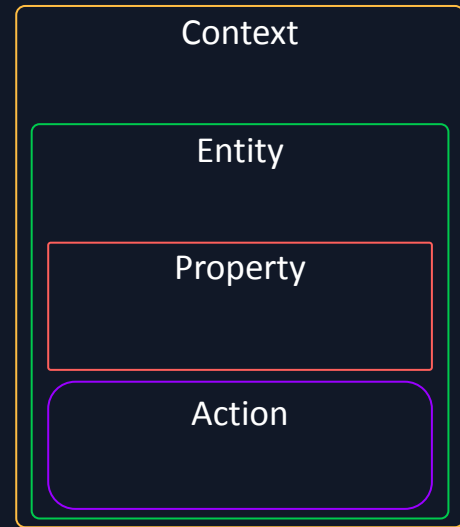
Action

Generic event structure

Exemplary on a website

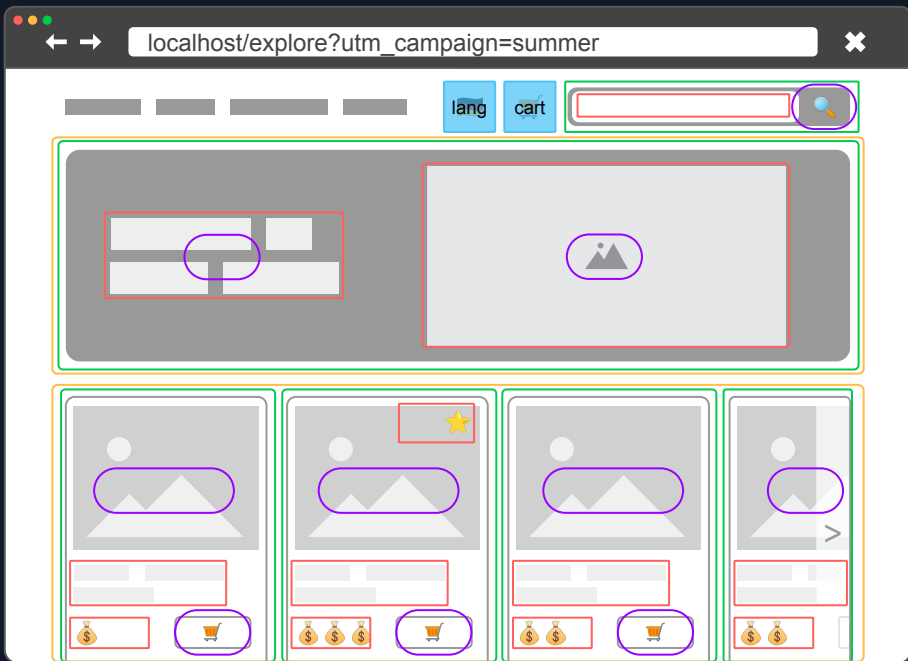


```
{  
  entity: "promotion",  
  action: "view",  
  data: {  
    name: "Setting up ...",  
    category: "analytics"  
  },  
  context: {  
    test: ["engagement", 0]  
  },  
}
```

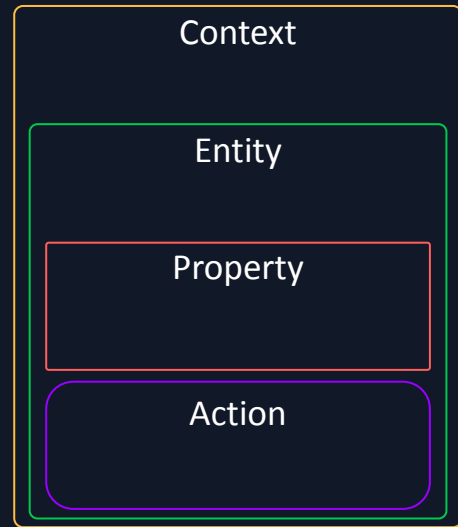


Generic event structure

Exemplary on a website

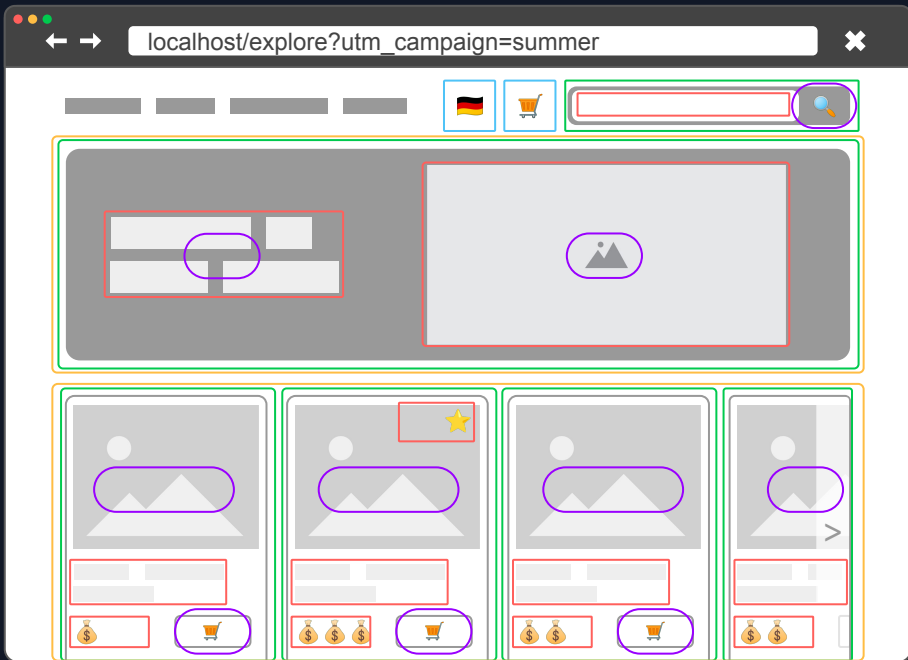


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  data: {  
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    category: "analytics"  
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  context: {  
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}
```

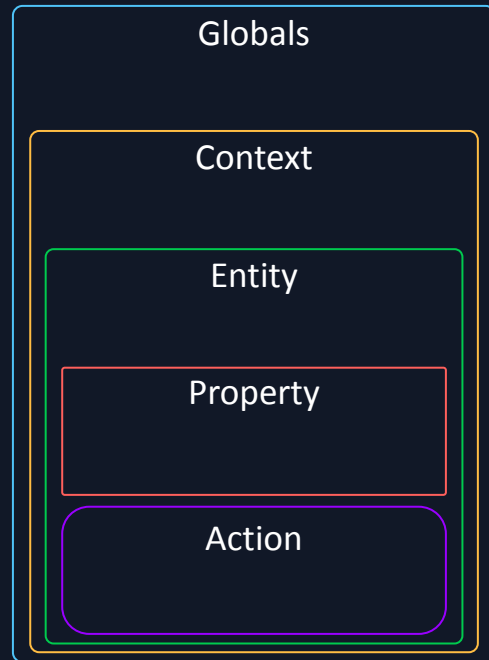


Generic event structure

Exemplary on a website



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{  
  entity: "promotion",  
  action: "view",  
  data: {  
    name: "Setting up ...",  
    category: "analytics"  
  },  
  context: {  
    test: ["engagement", 0]  
  },  
  globals: {  
    language: "en"  
  }  
}
```



Generic event structure

Exemplary on a website

tagging.html

```
<body data-elbglobals="language:en">
  <div data-elbcontext="test:engagement">
    <div data-elb="promotion" data-elbaction="visible:view">
      <h1 data-elb-promotion="name:Setting up tracking easily">
        Setting up tracking easily
      </h1>
      <p data-elb-promotion="category:analytics">Analytics</p>
    </div>
  </div>
</body>
```

```
{
  entity: "promotion",
  action: "view",
  data: {
    name: "Setting up ...",
    category: "analytics"
  },
  context: {
    test: ["engagement", 0]
  },
  globals: {
    language: "en"
  }
}
```

Globals

<div data-elbglobals="key:value">

Context

<div data-elbcontext="key:value">

Entity

<div data-elb="entity">

Property

<div data-elb-entity="key:value">

Action

<div data-elbaction="trigger:action">

Generic event structure

Exemplary on a server

src/packages/promotions/test.ts

```
await elb({  
  event: "promotion view",  
  data: {  
    name: "Setting up tracking easily",  
    category: "analytics",  
  },  
  context: {  
    test: ["engagement", 0],  
  },  
  globals: {  
    language: "en",  
  },  
});
```

```
{  
  entity: "promotion",  
  action: "view",  
  data: {  
    name: "Setting up ...",  
    category: "analytics"  
  },  
  context: {  
    test: ["engagement", 0]  
  },  
  globals: {  
    language: "en"  
  }  
}
```

Globals

<div data-elbglobals="key:value">

Context

<div data-elbcontext="key:value">

Entity

<div data-elb="entity">

Property

<div data-elb-entity="key:value">

Action

<div data-elbaction="trigger:action">

```
walker.js event

{
  event: 'promotion view', // Combination of entity and action
  data: { // Arbitrary set properties with the data-elb-promotion attribute
    name: 'Setting up tracking easily',
    category: 'analytics',
  },
  context: { // Related properties defined with the data-elbcontext attribute
    test: ['engagement', 0] // Value and order
  },
  globals: { // General Properties defined with the data-elbglobals attribute
    language: 'en'
  },
  user: { // Stored user ids (manually added once)
    id: 'userid',
    device: 'cookieid',
    session: 'sessionid',
  },
  nested: [], // All nested entities within the promotion
  consent: { functional: true }, // Status of the consent state(s)
  id: '1647261462000-01b5e2-5', // Timestamp, group & count of the event
  trigger: 'visible', // Name of the trigger that fired
  entity: 'promotion', // Entity name
  action: 'view', // Entity action
  timestamp: 1647261462000, // Time when the event fired
  timing: 3.14, // How long it took from the page load to trigger the event
  group: '01b5e2', // Random group id for all events on a page
  count: 2, // Incremental counter of the events on a page
  version: { // Helpful when working with raw data
    walker: 1.6, // Used walker.js version
    config: 42, // A custom configuration version number
  },
  source: { // Origins of the event
    type: "web", // Source type of the event
    id: 'https://github.com/elbwalker/walker.js', // Source id of the event
    previous_id: 'https://www.elbwalker.com/' // Previous source id (referrer)
  },
  walker: true, // Flag to filter events
}
```

- ✓ First party
- ✓ Source of truth
- ✓ Vendor agnostic
- ✓ Structured flexibility
- ✓ Industry independent

  **Online Marketer**

  **Data Governance**

  **Data Scientist**

  **Product Owner**

  **Data Analyst**

  **Growth Manager**

  **DevOps & Developer**

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walker.js event

{
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  globals: { // General Properties defined with the data-elbglobals attribute
    language: 'en'
  },
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    id: 'userid',
    device: 'cookieid',
    session: 'sessionid',
  },
  nested: [], // All nested entities within the promotion
  consent: { functional: true }, // Status of the consent state(s)
  id: '1647261462000-01b5e2-5', // Timestamp, group & count of the event
  trigger: 'visible', // Name of the trigger that fired
  entity: 'promotion', // Entity name
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  timestamp: 1647261462000, // Time when the event fired
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  },
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    language: 'en'
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  user: { // Stored user ids (manually added once)
    id: 'userid',
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- ✓ Industry independent

See **FRED PIKE**'s presentation
Essential GA4 parameters for
every GTM container
MEASURESUMMIT
2023



Data playground

Unlimited possibilities

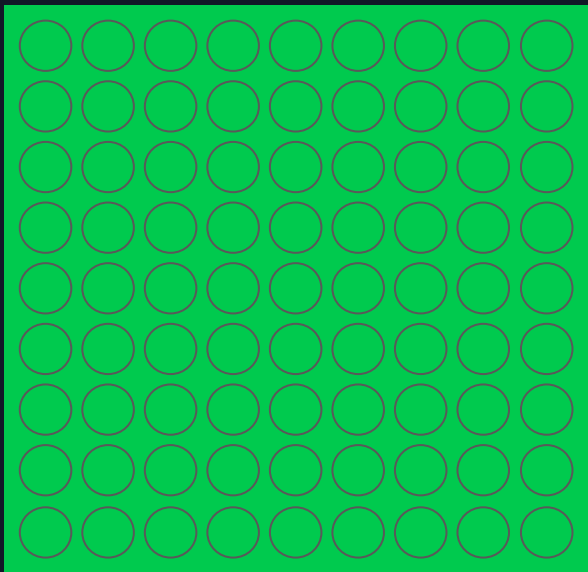
Contract

Building blocks

Data playground

Unlimited possibilities

Contract

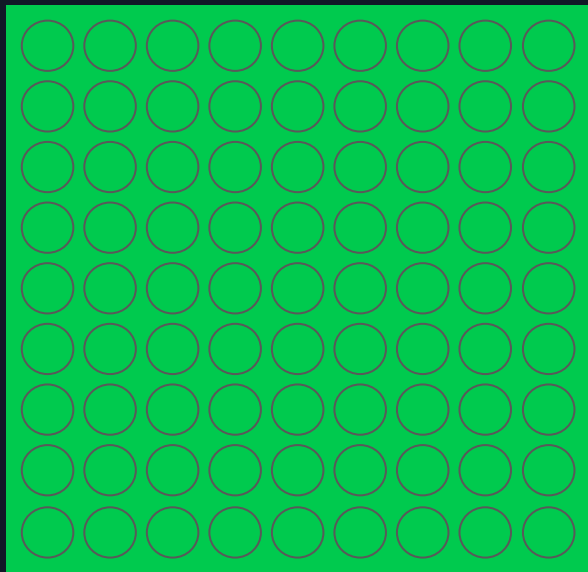


Building blocks

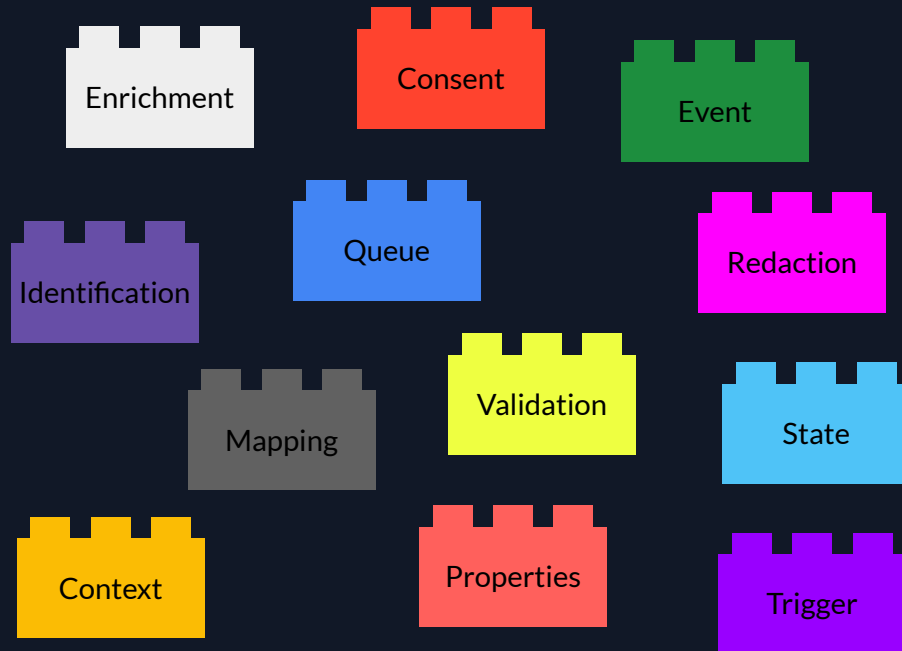
Data playground

Unlimited possibilities

Contract

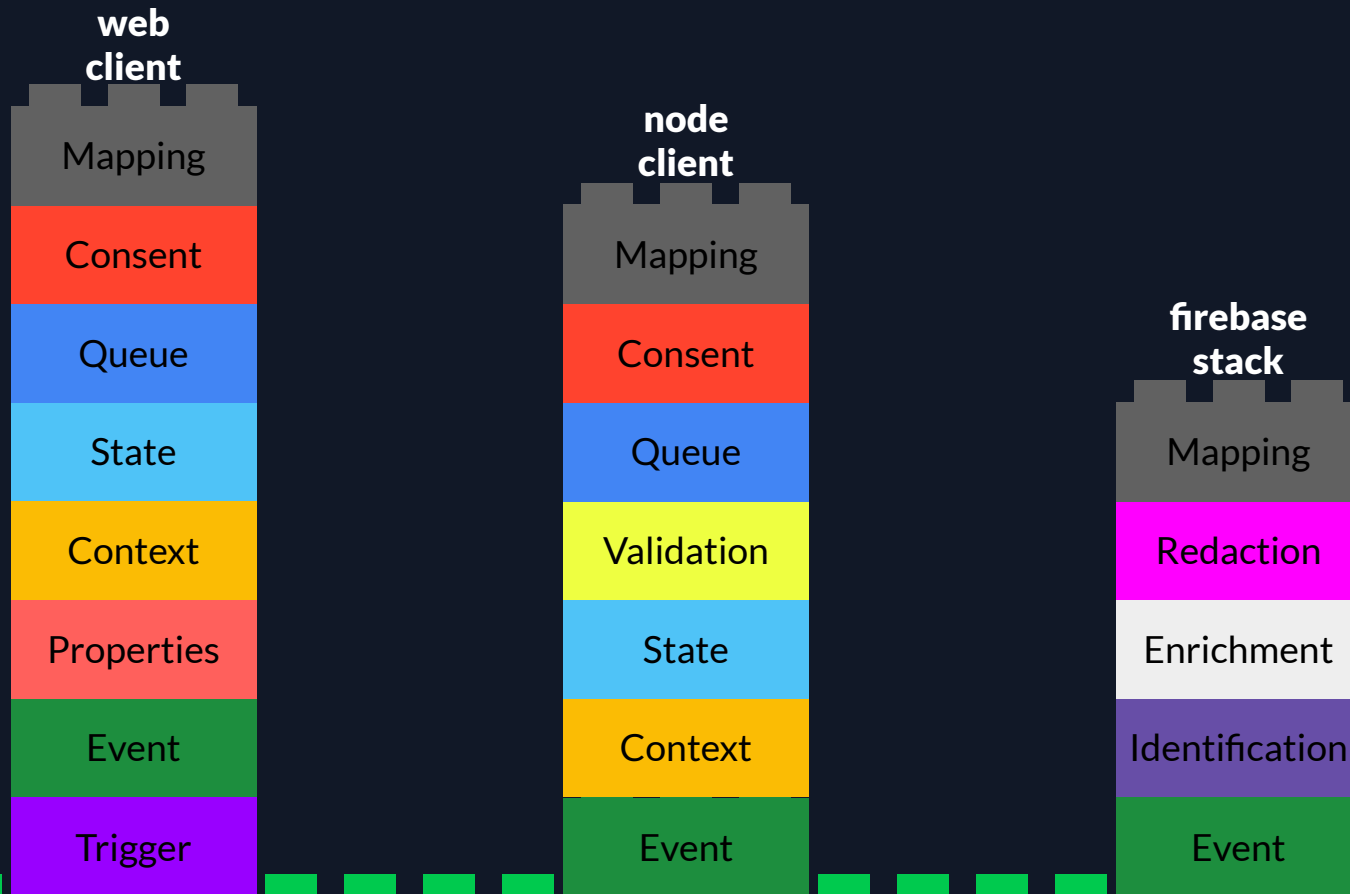


Building blocks



Utils are the building blocks

Just another brick in the stack



Sending to destinations

Spread the event(s)

```
{
  entity: "promotion",
  action: "view",
  event: "promotion view",
  data: {
    name: "Setting up ...",
    category: "analytics"
  },
  context: {
    test: ["engagement", 0]
  },
  globals: {
    language: "en"
  }
}
```




Data collection with **walkerOS**


Show me

Demo

Data collection with **walkerOS**


Show me

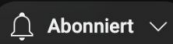
Suchen🔍🎤+🔔A







2:10 / 1:01:29 • Aufteilung des... >

First Party Data Workshop Teil 1 - Capturing mit walker.js

 **Markus Baers...**
394 Abonnenten

 **Abonniert** ▾




 20 

 **Teilen** 


First Party Data Workshop

Markus Baersch - 1/3

🔄 🔗

-  **First Party Data Workshop Teil 1 - Capturing mit walker.js**
Markus Baersch
1:01:30
-  **First Party Data Workshop Teil 2 - Der eigene Endpunkt**
Markus Baersch
1:06:49
-  **First Party Data Workshop Teil 3 - Beispiele zur Nutzung der Daten**
Markus Baersch
42:47

Alle Von Markus Baersch Ähnlich Angesehen

 **GA4 mit walker.js statt gtag.js**
Tagging für Webanalyse oder BigQuery
Markus Baersch
315 Aufrufe • vor 9 Monaten

<https://youtu.be/juzaUNb55t4?si=QGM4qLKbXxW022nX>

Data collection with **walkerOS**

Discussion

**What stops you
from using it?**