

RENDER LESS

Creating Performant Layouts

REACT BOSTON 2018 - COLE TURNER



NEW SPEAKER, WHO DIS?

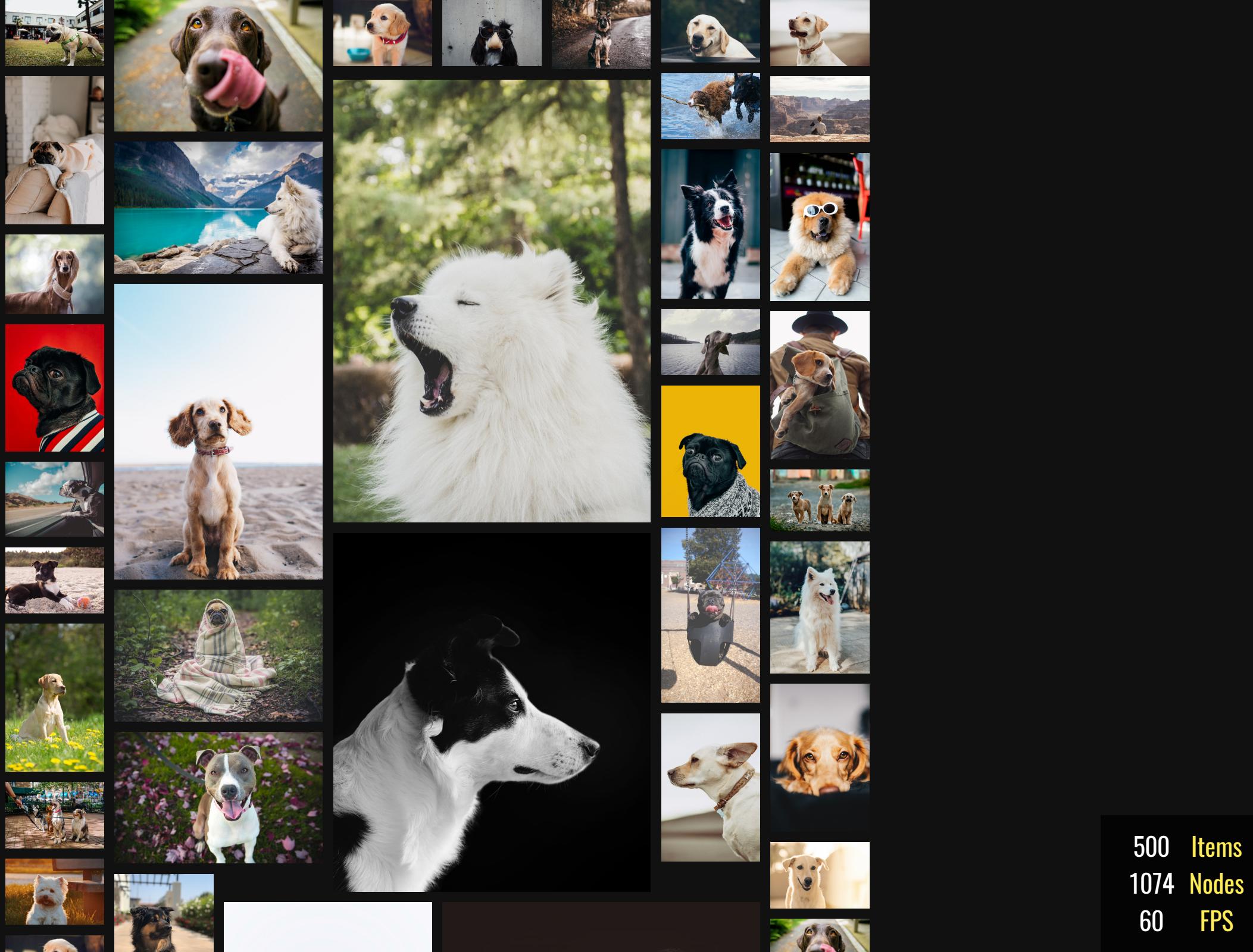
- Acquisition UI @ Netflix
- Previously PayPal
- Copy pasting since 2004

PER · FORM · ANCE

the capabilities of a machine, vehicle, or product, especially
when *observed* under particular conditions.

PERFORMANCE

- Time to Render
- Time to Interactive



500 Items
1074 Nodes
60 FPS



Aw, Snap!

Something went wrong while displaying this webpage.

[Learn more](#)Reload

- Paint flashing
Highlights areas of the page (green) that need to be repainted
- Layer borders
Shows layer borders (orange/olive) and tiles (cyan)
- FPS meter
Plots frames per second, frame rate distribution, and GPU memory
- Scrolling performance issues
Highlights elements (teal) that can slow down scrolling, including touch & wheel event handlers and other main-thread scrolling situations.

Emulate CSS media

Forces media type for testing print and screen styles

No emulation ▾

#document(1680 × 7977)
a(239 × 35)
a(233 × 35)
h3#hunt-controls(1680 × 35)
div#footer(70 × 70)Slow scroll rects Paints

.collection-container.type-zine.feature.collection-container.type-zine(327 × 327).collection-container.type-zine(327 × 327).collection-container.type-poll(327 × 327).choice-overlay(300 × 400)svg.icon(16 × 16).choice-overlay(84 × 85).collection-container.type-tag.feature.collection-container.type-zine(327 × 327).collection-container.type-zine(327 × 327).collection-container.type-advert(310 × 160)

DetailsProfiler

Size 70 × 70 (at 1610,857)

Compositing Reasons Composition due to association with an element with a "position: fixed" or "position: sticky" style. Composition due to association with an element that may overlap other composited elements.

Memory estimate 19.1 KB

Paint count 412

Slow scroll regions

Sticky position constraint

Brute Force with Isotope

```
1. export default class FeedItem extends React.PureComponent {  
2.     componentDidMount() {  
3.         this.context.isotope.appended(this.node);  
4.         const handler = imagesLoaded(this.node);  
5.         handler.on('progress',  
this.context.isotope.arrange);  
6.         handler.on('always',  
this.context.isotope.arrange);  
7.     }  
8.     componentWillUnmount() {  
9.         this.context.removeFromIsotope(this.node);  
10.    }
```

Bottlenecks

- DOM mutations
- Variable element sizing
- Render Everything
- Dynamic arrangement

Bottlenecks

- *Reduce* DOM mutations
- Variable element sizing
- Render Everything
- Dynamic arrangement

Bottlenecks

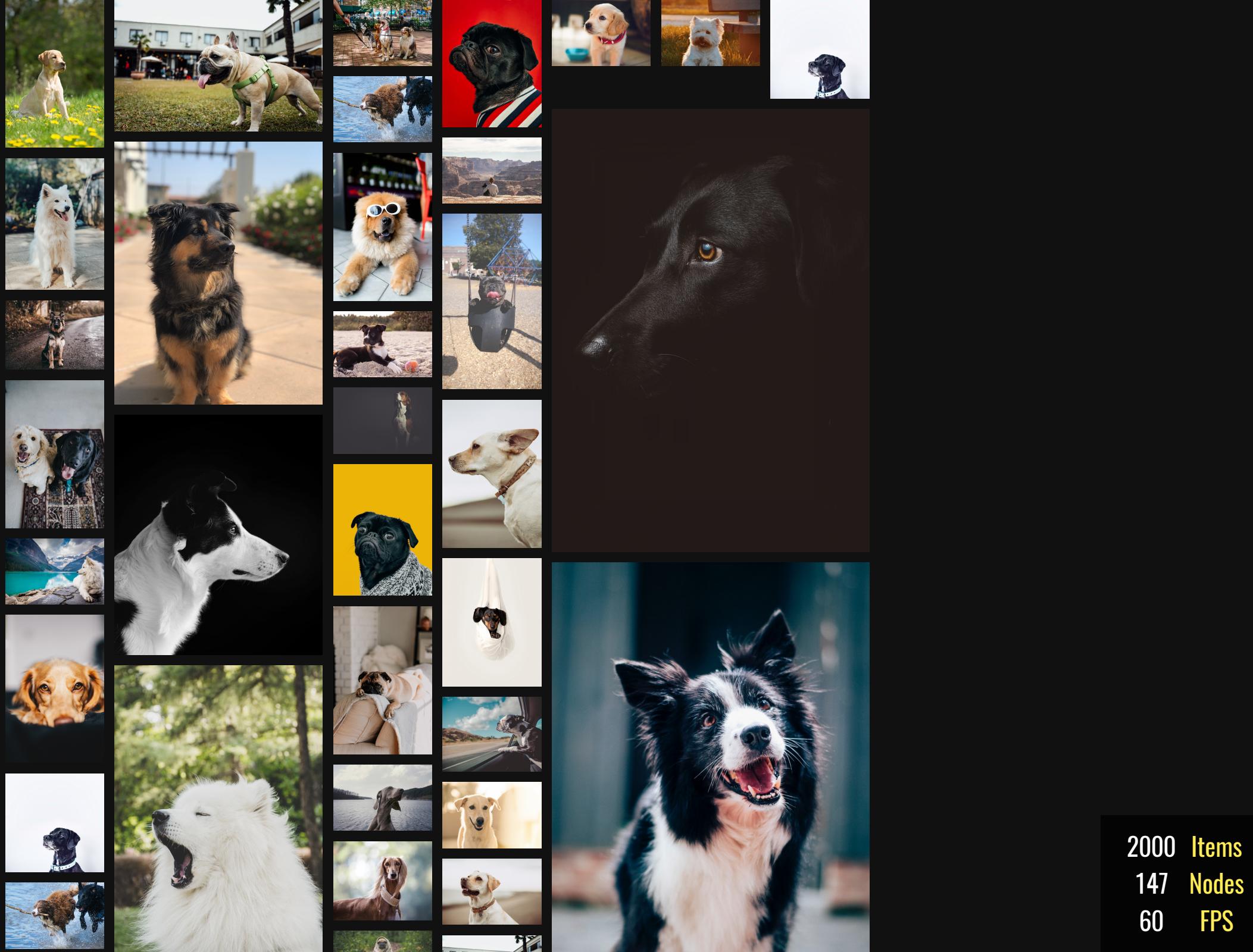
- *Reduce* DOM mutations
- *Fixed* element sizing
- Render Everything
- Dynamic arrangement

Bottlenecks

- *Reduce* DOM mutations
- *Fixed* element sizing
- *Virtual* rendering
- Dynamic arrangement

Bottlenecks

- *Reduce* DOM mutations
- *Fixed* element sizing
- *Virtual* rendering
- *Static* arrangement



2000 Items
147 Nodes
60 FPS

RESOURCES

- [React Performance Tools](#)
- [Debugging React Performance with React 16...](#)
- [CSS Triggers](#)
- [Avoid Large Complex Layouts & Layout Thrashing...](#)
- [Masonry in React: A Performance Hell](#)

THE END

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AND OCASSIONAL TWEETS ABOUT JAVASCRIPT
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