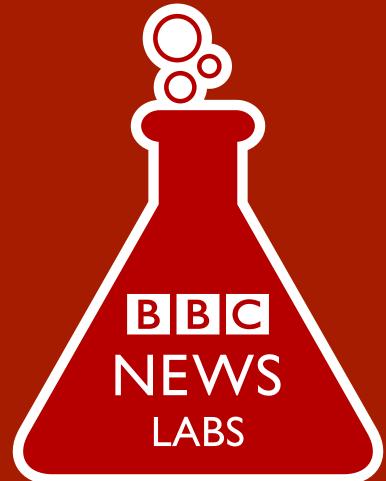


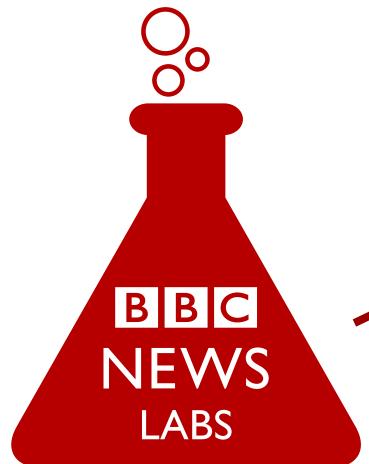
Rob Squires

@rob_squires

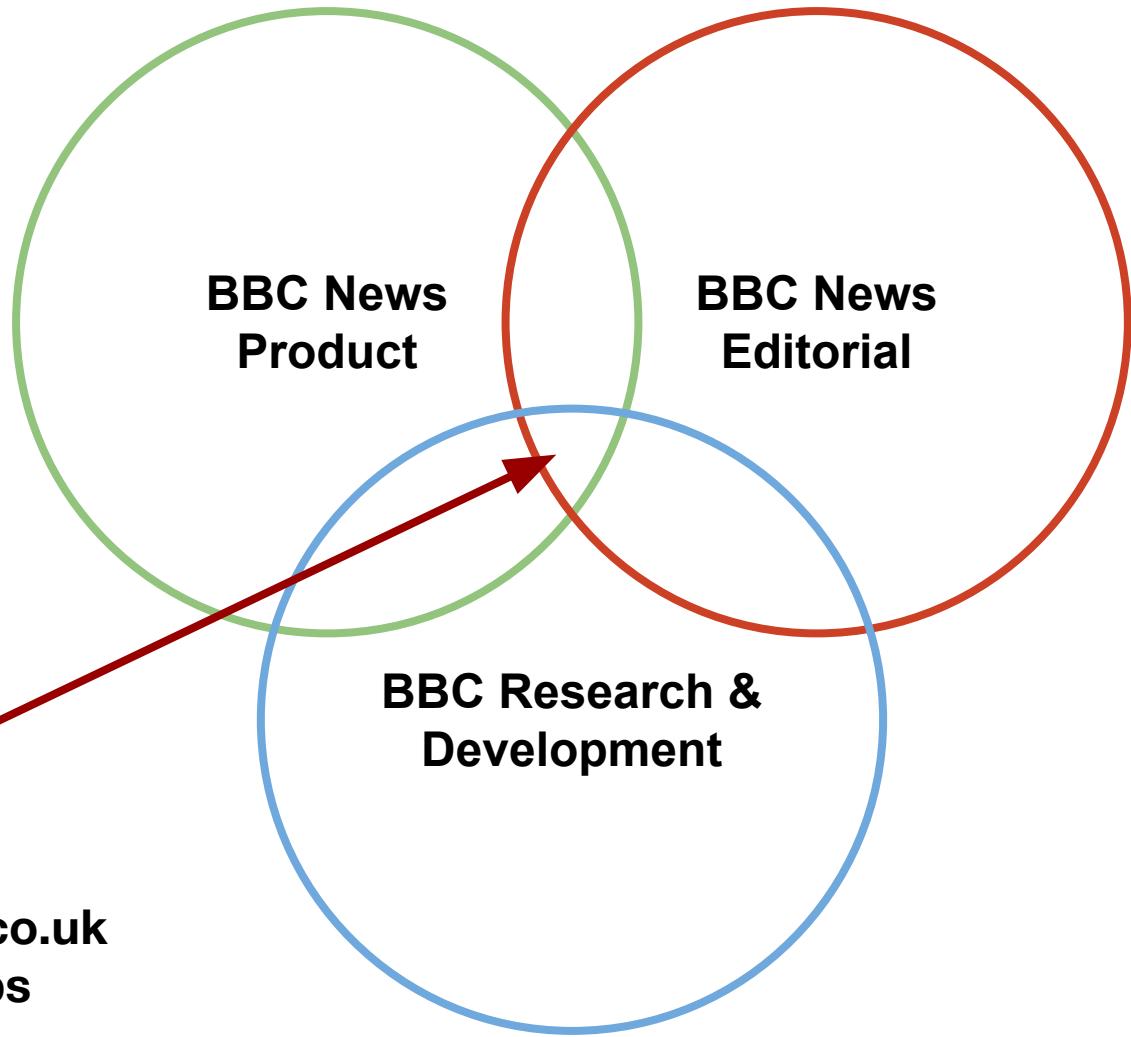
Alex Norton

@alxnorton



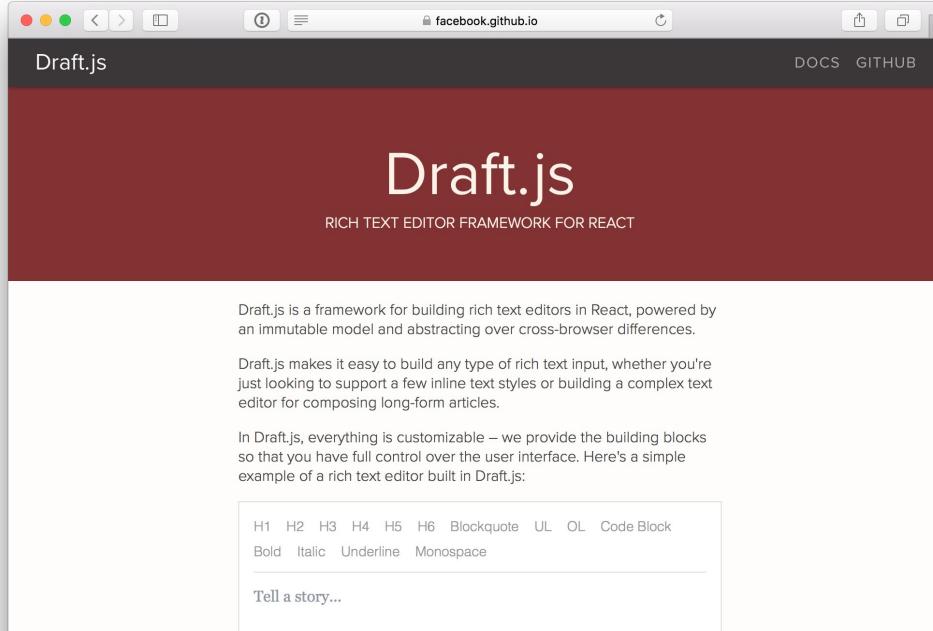


<http://bbcnewslabs.co.uk>
@BBC_News_Labs



Creating video from text with Draft.js

1. Demystifying Draft.js
2. Audio & Video Editing



What is Draft.js?

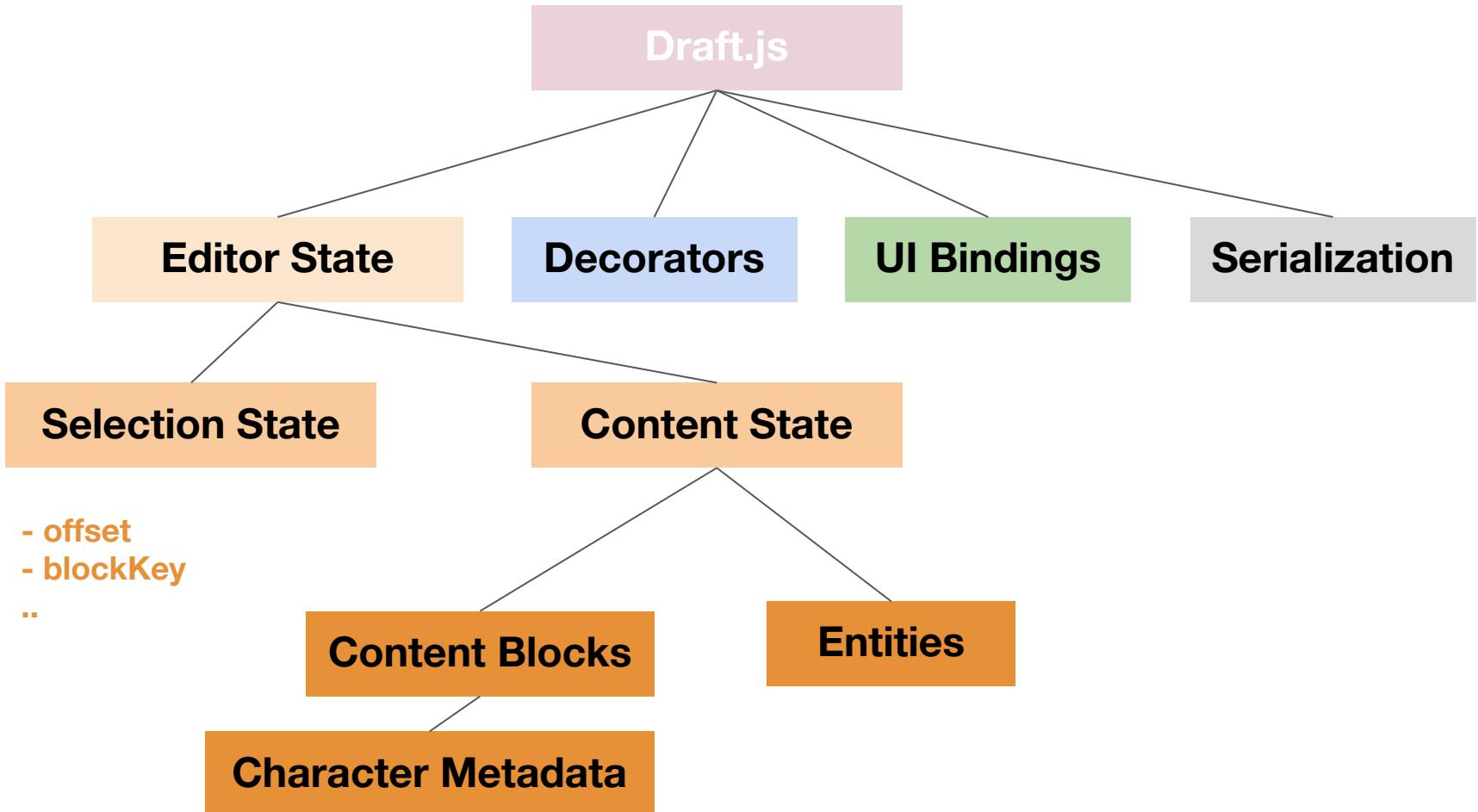
ContentEditable:

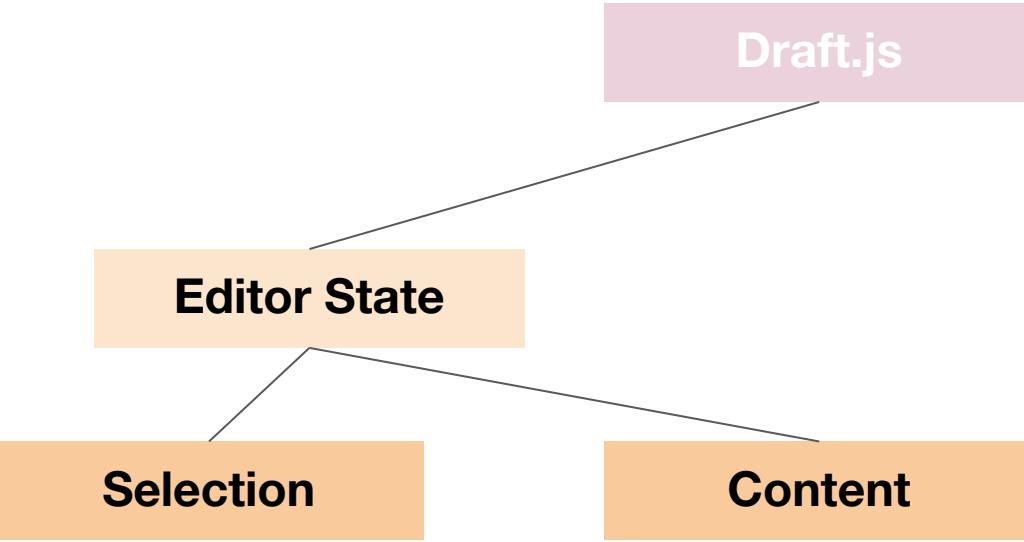
```
<div contenteditable="true">  
  React is great  
</div>
```

Notoriously tricky to work with!*

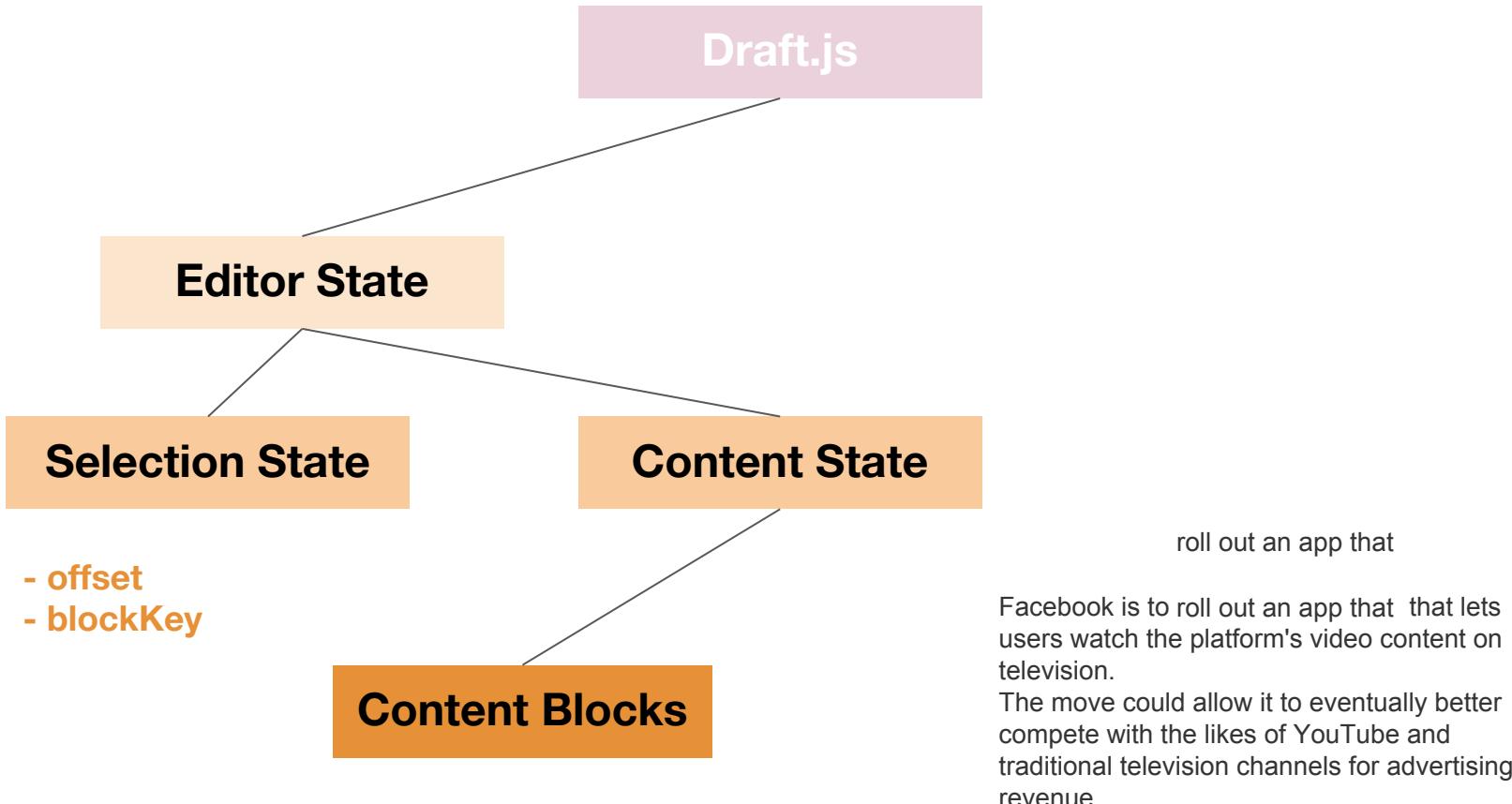
Draft.js wraps the it in a React **controlled component**

* <https://medium.engineering/why-contenteditable-is-terrible-122d8a40e480>





demo



What can we do with it?

demo

Styles vs Entities

```
{  
  HIGHLIGHT: {  
    backgroundColor: 'green'  
  }  
}
```

Character List	F	a	c	e	b	o	o	k		i	s		s	e	t
Style	highlight	high light	highlig ht	highlig ht	highlig ht	highlig ht	highlig ht	highlig ht							

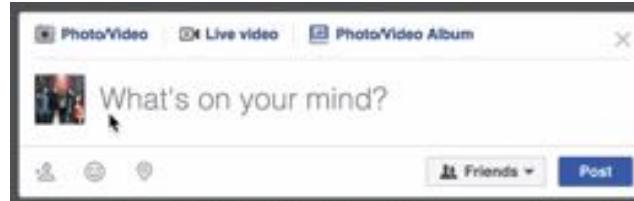
...

```
<span style="background-color: green;">Facebook</span>
```

...

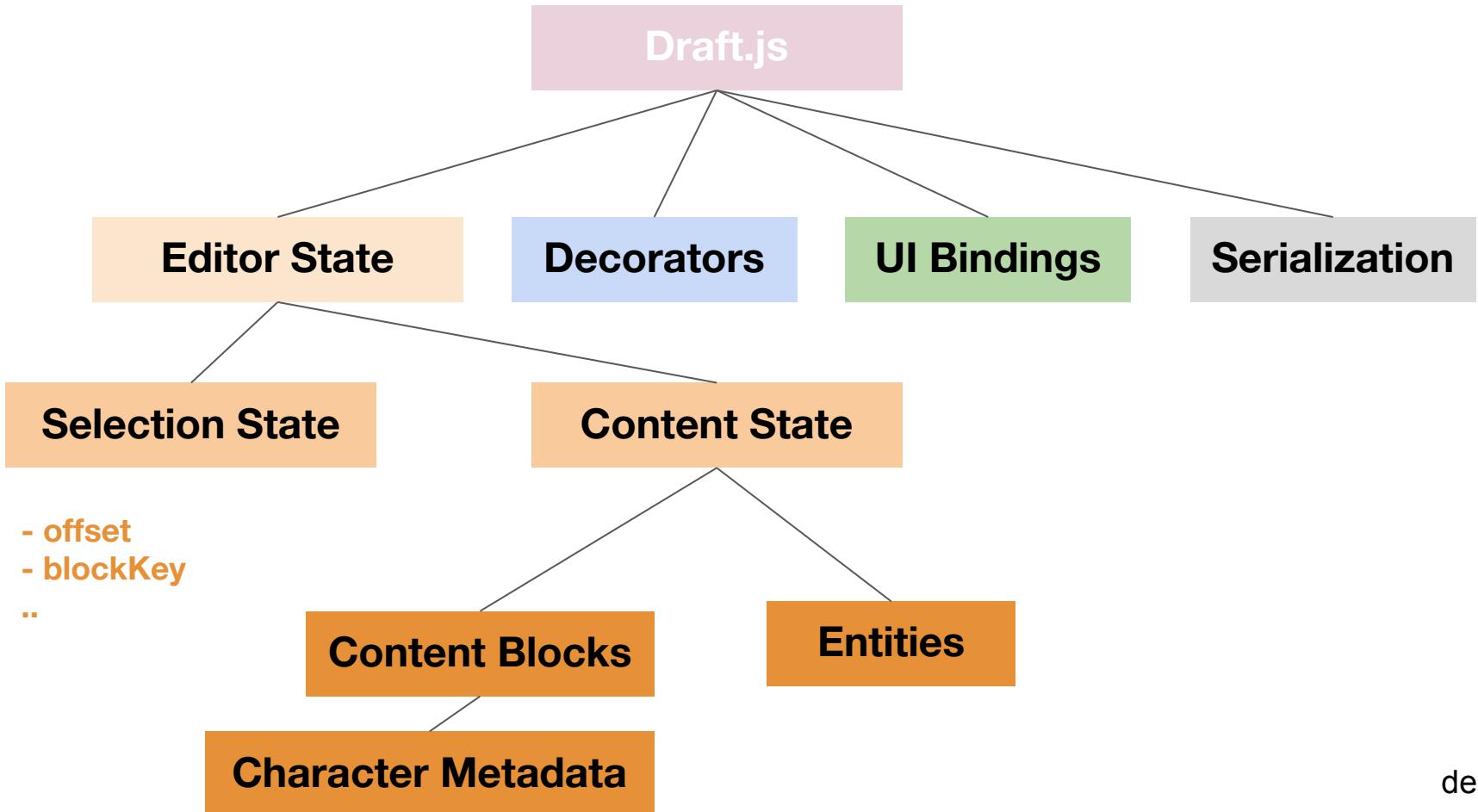
Styles vs Entities

```
{  
  type: 'STOCK',  
  data: {  
    ticker: 'FB',  
    price: 102  
  },  
  mutability: 'MUTABLE'  
}
```

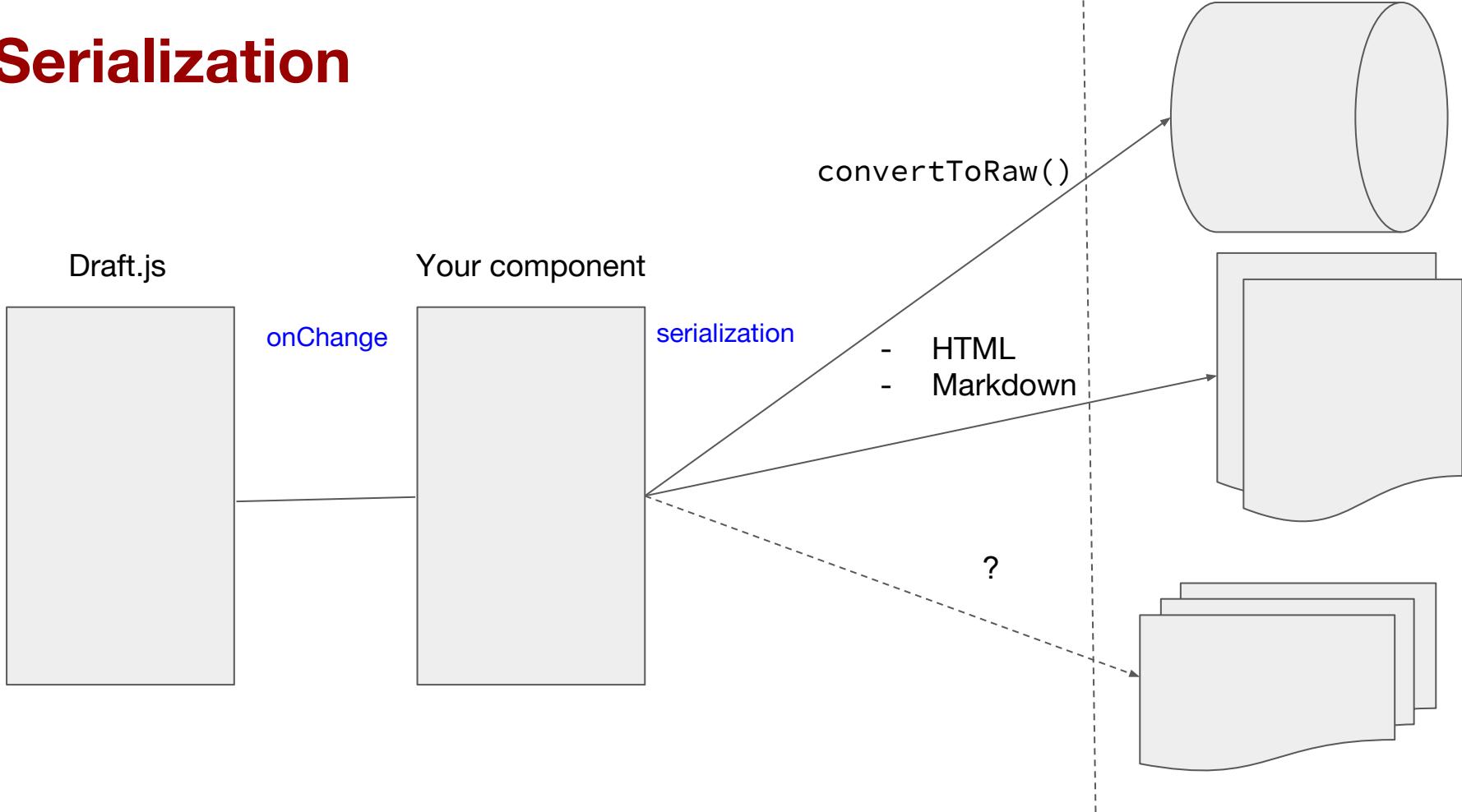


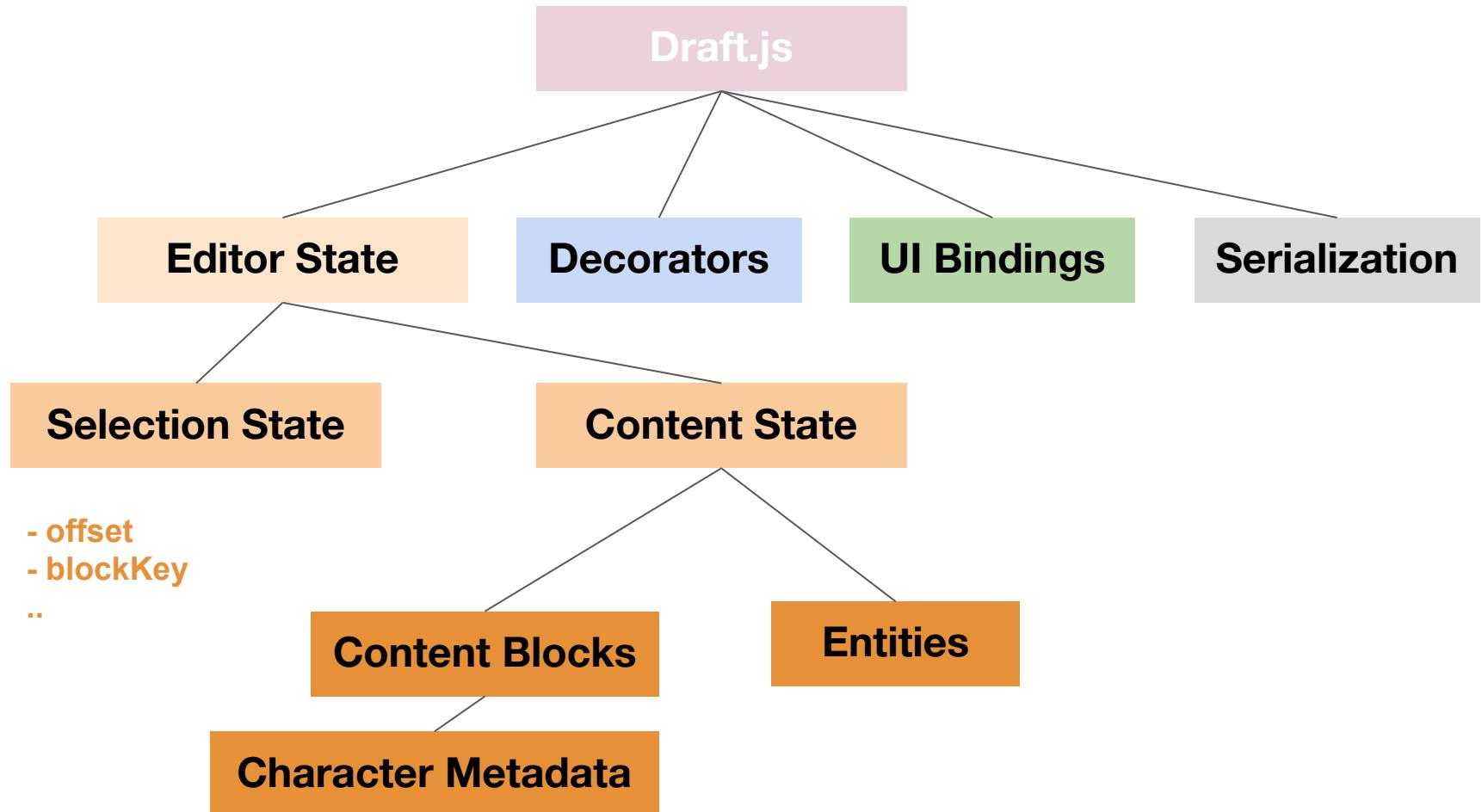
Character List	F	a	c	e	b	o	o	k		i	s		s	e	t
EntityKey	asd3														

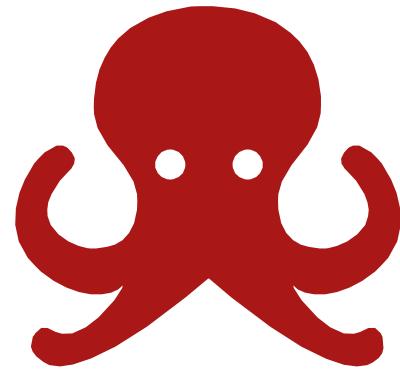
```
<span  
  class='stock'  
  title='${ticker} ${price}'>  
  {text}  
</span>
```



Serialization





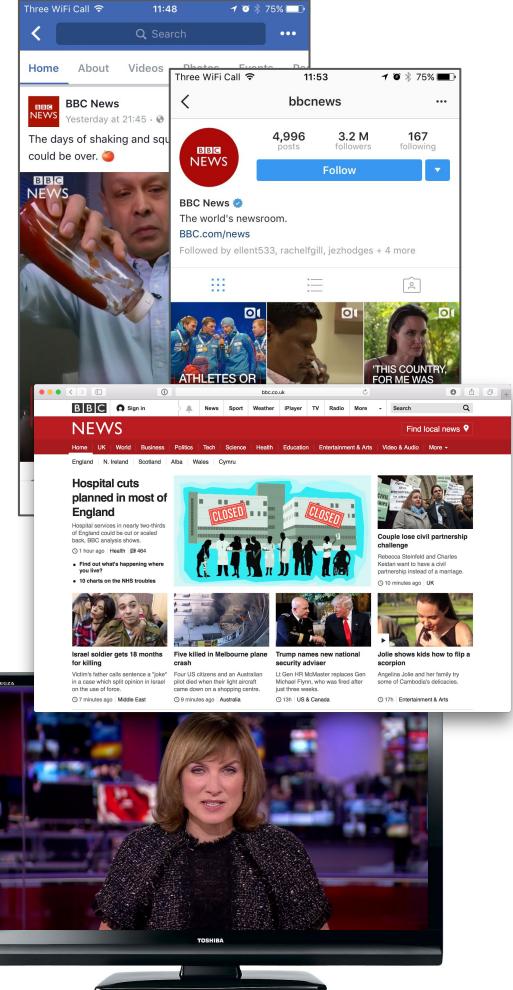


OCTO

(Online Content Toolkit)



AP Associated Press
 **REUTERS**



Content analysis

- Speech-to-text ←
- Facial recognition
- Shot detection
- Optical character recognition
- Concept extraction
- Sentiment analysis



**Speech-to-text
engine**



Speaker 1	1.39	1.78	Thousands
	1.90	2.44	of
	2.44	2.54	people
	2.54	2.96	have
	2.96	3.52	been
	3.78	3.91	lining
	3.94	4.27	up
	4.27	4.48	since
...			
Speaker 2	11.62	12.22	Previously
	12.22	12.43	only
	12.48	12.74	shown
	...		



But even though Beijing hopes that her cuteness will help convince many people here to have warmer feelings towards mainland China and unification, for the people here politics is the last thing on their minds. To them, Yuan Zai is very much made in Taiwan.



They even though Beijing hopes **Hercules** will help convince many people here to **help**. Warmer feelings towards mainland China. Unification. People here. Politics is **a lasting undermine**, to them, then dies very much. Made in Taiwan.

Demo

bbc-news-uk-11726211/1587250000001

BBC News Labs Dev

Transcript Editor



[Save transcript](#)

Keyboard shortcuts

- Ctrl+Space: play/pause
- Ctrl+Left: go back 0.5 seconds
- Ctrl+Right: go forward 0.5 seconds

Speaker 0: playful cuteness and totally adorable. This six-month-old panda cub has been a huge sensation in Taiwan ever since she was born in July.

Speaker 0: Previously not shown in videos and pictures, on Monday she was put on a stage for the first time at the Taipei Zoo.

Speaker 1: Thousands of people have been lining up since very this morning to get a glimpse of the panda cub Yuan Zai.

Speaker 1: But even though Beijing hopes that her cuteness will help convince many people here to help, warmer feelings towards mainland China's citizenship People here believe it is having an influence, to them, that they very much hate in Taiwan.

Speaker 2: For two years, friend arranged a fund raise, where the profits were given to Thailand. I thought it was a struggle to win an over race. I don't think that way any more. I think you and I had just a very type aligned. I would check about where she's from.

Speaker 3: China's gone to giving Taiwan, probably one reason why named the panda bearing name in Chinese, which together mean respect to China. My mom, new professor. New university of course target at the house to continue his career.

Speaker 4: after my partner had helped design's image.

Speaker 2: right. It's probably some reason that they gave their friends to us to be passed. Discovered in involving Taiwan for over time, but it's not really related to positive to their two years. Through many different places, especially like younger generation

0:00 | 1:00

The solution

Playful curious and totally adorable, this six month old panda cub has been a huge sensation in Taiwan ever since she was born in July.

Previously on shown in videos and pictures, on Monday she was put on a show for the first time at the Taipei Zoo.

Thousands of people have been lining up since early this morning to get a glimpse of the panda cub Yuan Zai.

But even though Beijing hopes that her cuteness will help convince many people here to have warmer feelings towards mainland China and unification, for the people here politics is the last thing on their minds. To them, Yuan Zai is very much made in Taiwan.

At first, when her parents were given to Taiwan, I thought it was a strategy to win us over, but now I don't think that way any more. I think Yuan Zai is just a very cute animal. I won't think about where she's from.

China's goals in giving Taiwan pandas are clear. he named his parents twenty one in January, which together mean reunion to China. His time, one province has hundreds of missus target at the island to reinforce his claim

some say pandas have helped Beijing's image.

That's it. Hammer's some woman that they gave these pandas to us is a positive development in relations between the two sides, but it's not really related to politics in these few years. Though many Taiwanese people, especially the younger generation don't feel so strongly about independence or unification.

Unlike other pandas born outside of mainland China.

You won't have to be returned to China because her parents were Cliff. Not along than one million Taiwanese are expected to see her in just the first three months

at this rate the tender is expected to do what Beijing, hasn't been able to



Playful curious and totally adorable, this six month old panda cub has been a huge sensation in Taiwan ever since she was born in July.

Previously on shown in videos and pictures, on Monday she was put on a show for the first time at the Taipei Zoo.

Thousands of people have been lining up since early this morning to get a glimpse of the panda cub Yuan Zai.

But even though Beijing hopes that her cuteness will help convince many people here to have warmer feelings towards mainland China and unification, for the people here politics is the last thing on their minds. To them, Yuan Zai is very much made in Taiwan.

At first, when her parents were given to Taiwan, I thought it was a strategy to win us over, but now I don't think that way any more. I think Yuan Zai was just a very cute animal. I won't think about where she's from.

China's goals in giving Taiwan pandas are clear. he named his parents twenty one in January, which together mean reunion to China. His time, one province has hundreds of missus target at the island to reinforce his claim

some say pandas have helped Beijing's image.

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Unlike other pandas born outside of mainland China.

You won't have to be returned to China because her parents were Cliff. Not along

Everything is an Entity

Thousands	‿	of	‿	people	‿	have	
{ type: 'WORD', data: { start: 1.39, end: 1.77 } }	{ type: 'SPACE' }	{ type: 'WORD', data: { start: 1.90, end: 2.44 } }	{ type: 'SPACE' }	{ type: 'WORD', data: { start: 2.44, end: 2.54 } }	{ type: 'SPACE' }	{ type: 'WORD', data: { start: 2.54, end: 2.94 } }	...

Rules

1. New characters entered (including spaces) form part of an existing word and keep existing timings
2. Deleting spaces between words merges them and their timings
3. Prevent splitting blocks in the middle of words
4. New blocks created by splitting inherit speaker metadata
5. Remove leading and trailing spaces

etc.

2. Deleting spaces between words merges them and their timings

Thousands	↳	ofpeople	↳	have	ave
{ type: 'WORD', data: { start: 1.39, end: 1.77 } }	{ type: 'SPACE' }	{ type: 'WORD', data: { start: 1.90, end: 2.54 } }	{ type: 'SPACE' }	{ type: 'WORD', data: { start: 2.54, end: 2.94 } }	'WORD', { t: 2.54, 2.94

```
contentBlock.characterList.reduce((characterList, character) => {

  const previousCharacter = characterList.last();

  if (character.entity.type === 'WORD'
    && previousCharacter.entity.type === 'WORD'
    && character.entity !== previousCharacter.entity) {

    Entity.mergeData(previousCharacter.entity, { end: character.entity.end });

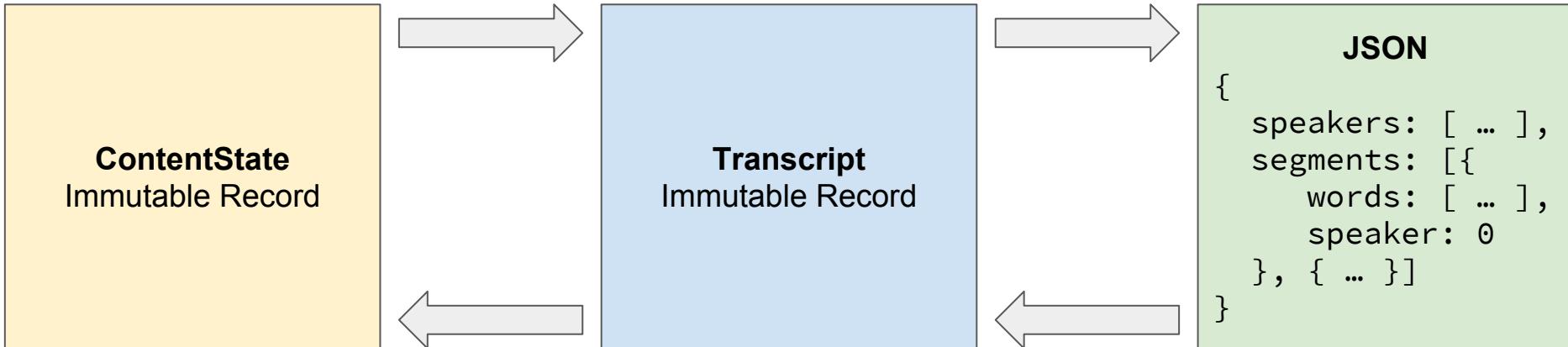
    return characterList.push(
      CharacterMetadata.applyEntity(character, previousCharacter.entity)
    );
  } else {

    return characterList.push(character);
  }
});
```

Serialization

convertToTranscript()

transcript.toJSON()



convertFromTranscript()

Transcript.fromJSON()

This screenshot shows a GitHub repository page for `bbc / transcript-model`. The repository is private, has 23 stars, and 0 forks.

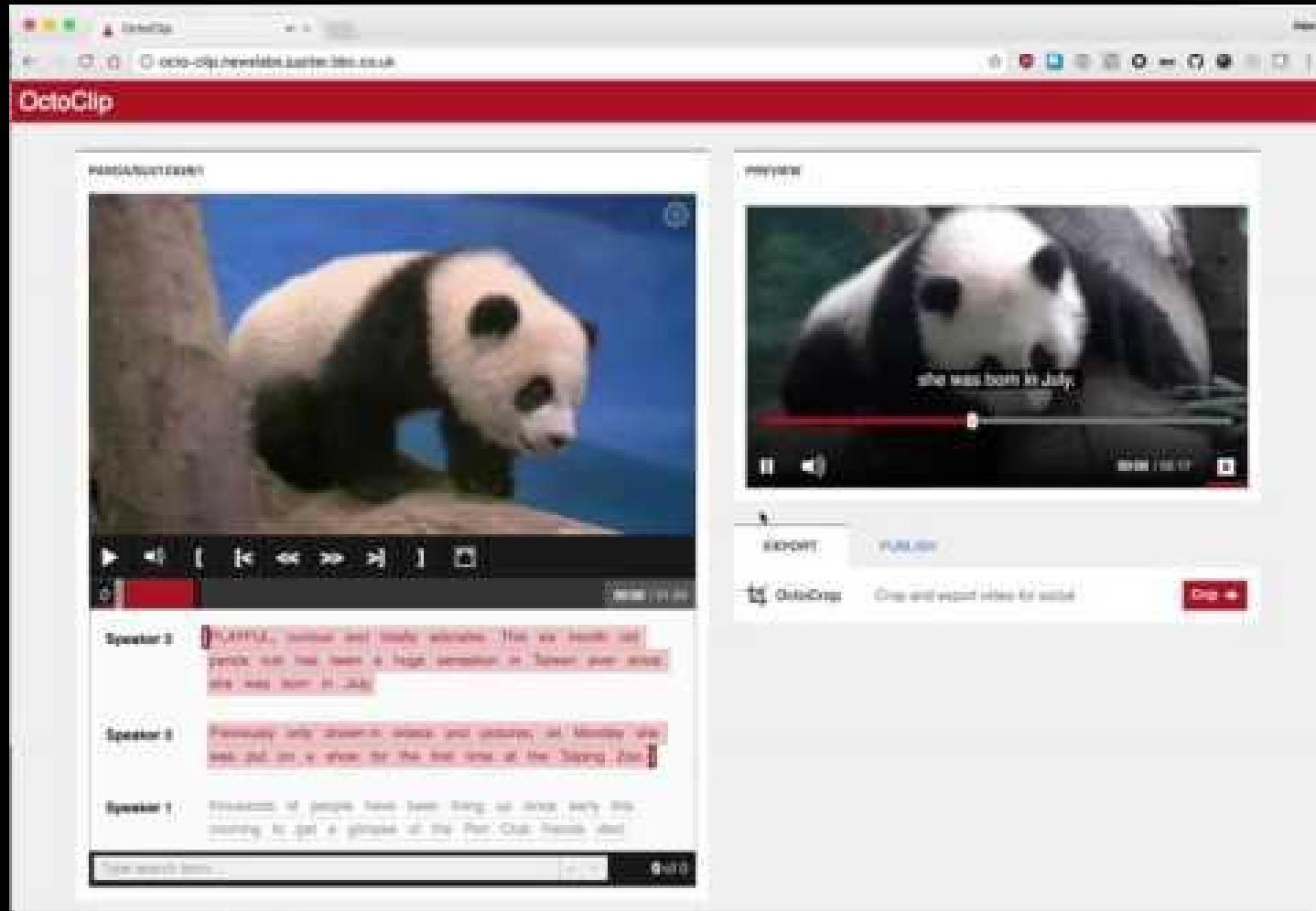
The repository description is: "JSON schema and JavaScript model classes for dealing with time-aligned transcripts of speech." It has 16 commits, 3 branches, 0 releases, and 1 contributor.

The latest commit by `alexnorton` is `implement CLI for Kaldi output conversion`, made 22 days ago. Other commits include `new build`, `add fromKaldi method`, and several changes to files like `lib`, `src`, `.eslintrc`, `.gitignore`, `README.md`, `cli.js`, `package.json`, `schema.json`, and `webpack.config.js`.

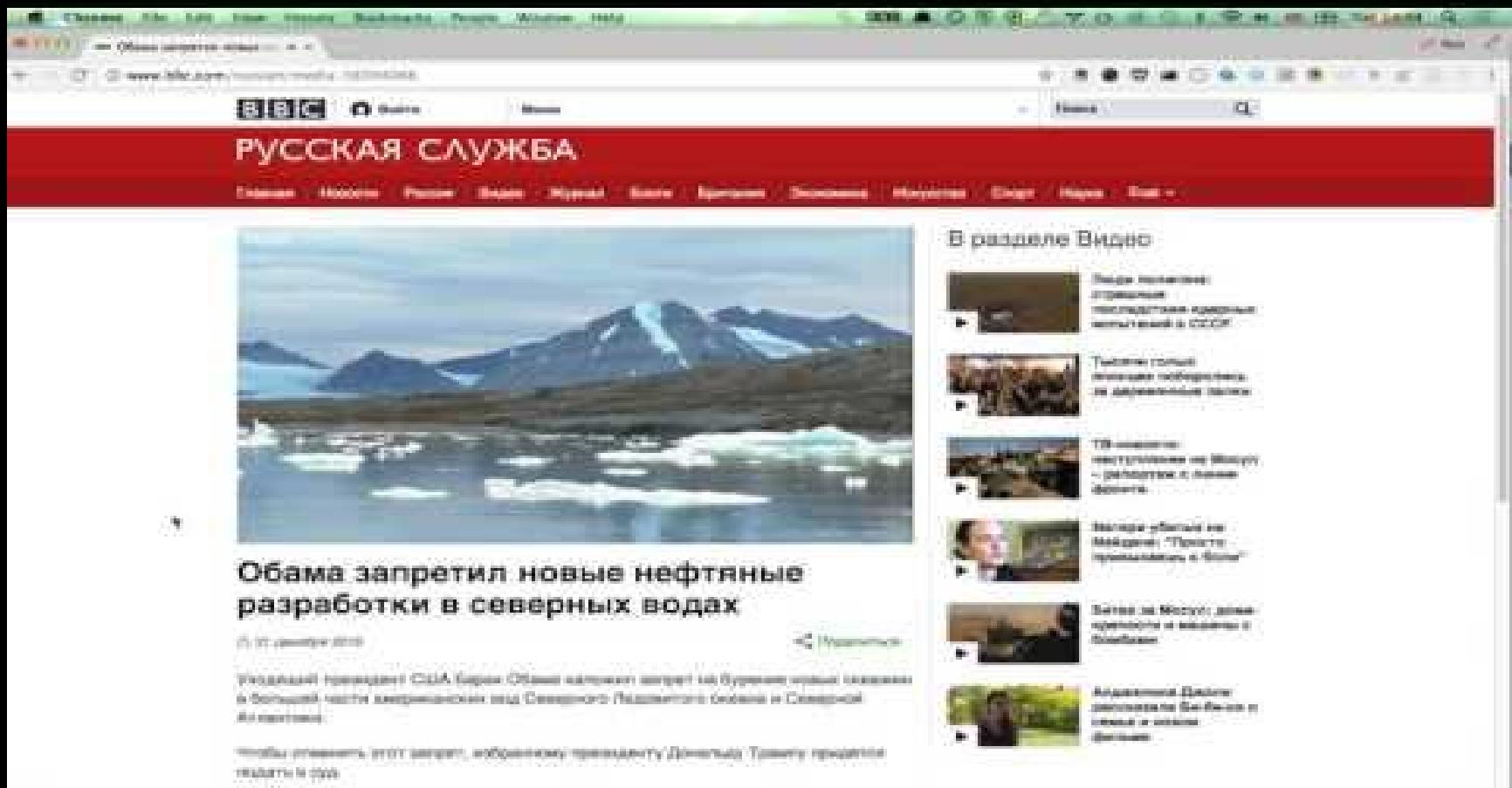
The `README.md` file contains the following content:

```
transcript-model

JSON schema and JavaScript model classes for dealing with time-aligned transcripts of speech.
```



ALTO



BBC World Service

29 (soon to be 40) services around the world

English Language content is often reversioned



The Nice Jazz Festival, held annually since 1948, was the first jazz festival of international significance.

At the inaugural festival, Louis Armstrong and his All Stars were the headliners.

Over the years, many artists, such as Dizzy Gillespie and Miles Davis regularly appeared at the festival.

The Nice Jazz Festival, held annually since 1948, was the first jazz festival of international significance.

At the inaugural festival, Louis Armstrong and his All Stars were the headliners.

Over the years, many artists, such as Dizzy Gillespie and Miles Davis regularly appeared at the festival.

Nice Jazz Festival

Home auto number: 00-000-7
Mobile number: 00-000-0-1

00-000-1

00-000-7

00-000-7

How does it work?



HUGH:
The Nice Jazz Festival...

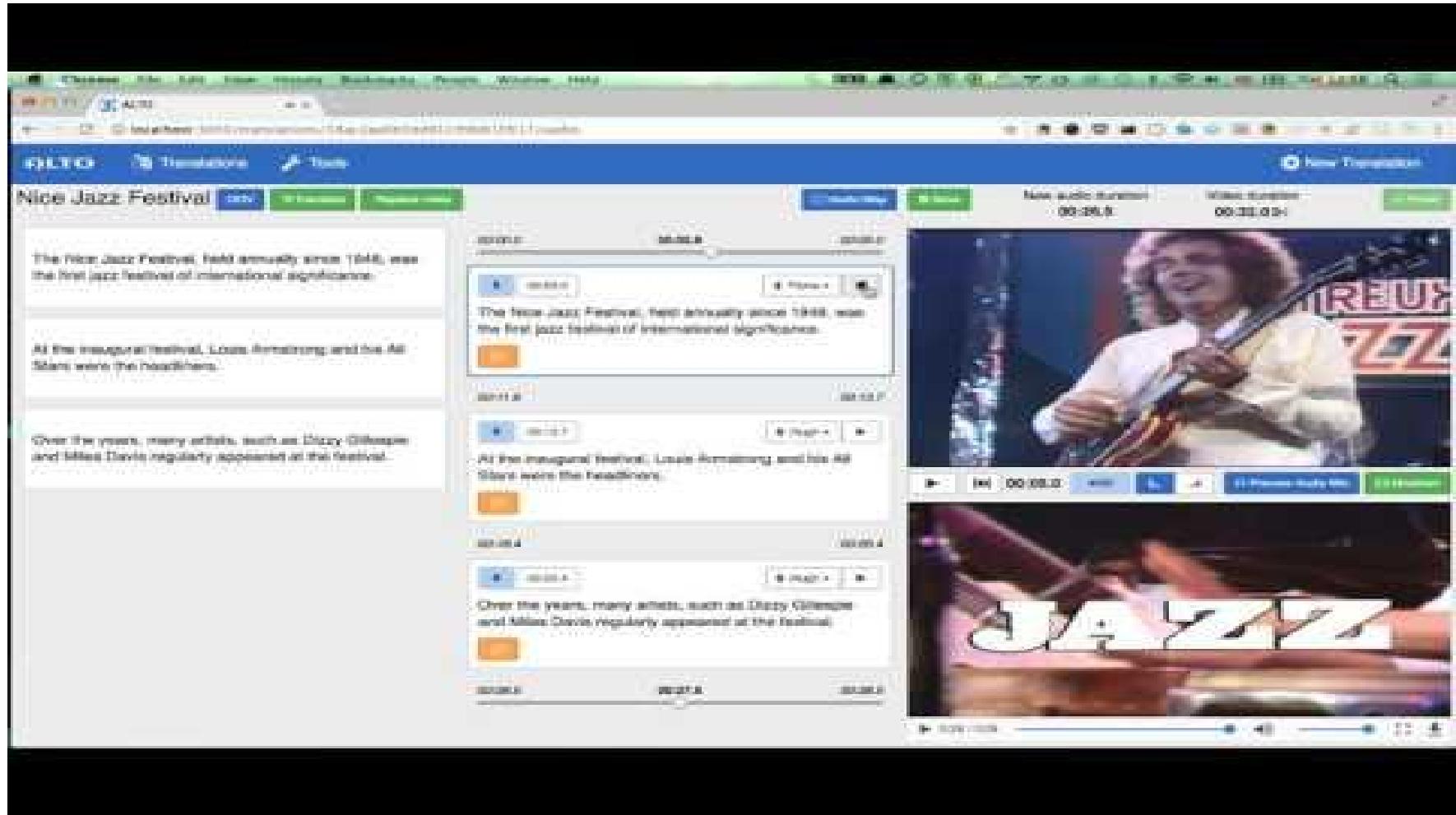


Text To Speech API





Hugh vs Fiona



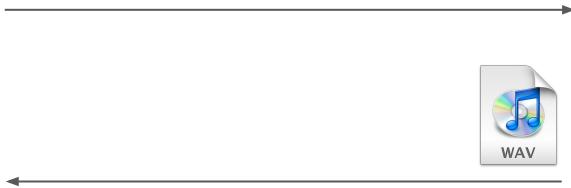
Pronunciation

We need a way to pronounce words specifically for a voice + keep the original

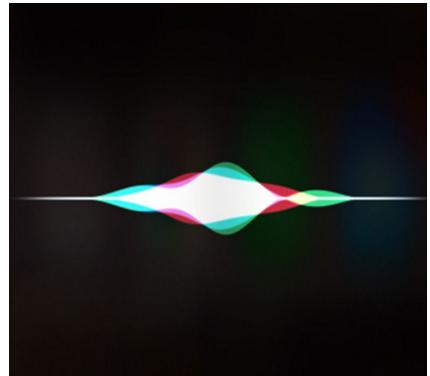
Because this is fiddly + time consuming, it would be great to share that effort with other journalists



HUGH:
The Nice Jazz Festival...



Text To Speech API





Speech Synthesis Markup Language (SSML) Version 1.0

W3C Recommendation 7 September 2004

This version:

<http://www.w3.org/TR/2004/REC-speech-synthesis-20040907/>

Latest version:

<http://www.w3.org/TR/speech-synthesis/>

Previous version:

<http://www.w3.org/TR/2004/PR-speech-synthesis-20040715/>

Editors:

Daniel C. Burnett, Nuance Communications

Mark R. Walker, Intel

Andrew Hunt, ScanSoft

Please refer to the [errata](#) for this document, which may include some normative corrections.

See also [translations](#).

Copyright ©1999 - 2004 W3C® ([MIT](#) , [ERCIM](#) , [Keio](#)), All Rights Reserved. W3C [liability](#), [trademark](#), [document use](#) rules apply.

3.1.10 **sub** Element

The **sub** element is employed to indicate that the text in the **alias** attribute value replaces the contained text for pronunciation. This allows a document to contain both a spoken and written form. The required **alias** attribute specifies the string to be spoken instead of the enclosed string. The processor should apply [text normalization](#) to the **alias** value.

The **sub** element can only contain text (no elements).

```
<?xml version="1.0"?>
<speak version="1.0" xmlns="http://www.w3.org/2001/10/synthesis"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:schemaLocation="http://www.w3.org/2001/10/synthesis
                           http://www.w3.org/TR/speech-synthesis/synthesis.xsd"
      xml:lang="en-US">
  <sub alias="World Wide Web Consortium">W3C</sub>
  <!-- World Wide Web Consortium -->
</speak>
```

The **_{Nice}** Jazz Festival

What's the User Experience?

The Nice Jazz Festival, held annually since 1948, was the first jazz festival of international significance.

At the inaugural festival, Louis Armstrong and his All Stars were the headliners.

Over the years, many artists, such as Dizzy Gillespie and Miles Davis regularly appeared at the festival.

This Nice Jazz Festival, held annually since 1948, was the first jazz festival of international significance.

At the inaugural festival, Louis Armstrong and his All Stars were the headliners.

Over the years, many artists, such as Dizzy Gillespie and Miles Davis regularly appeared at the festival.

Nice audio summary
00:26:0

Nice summary
00:33:0 0:24

The screenshot shows a web browser window with a blue header bar. The main content area displays a page about the Nice Jazz Festival. On the left, there are three text boxes with historical information. To the right of these are four video player controls, each with a play button, volume slider, and timestamp (e.g., 00:00:00). Below these controls is a large image of a person's hands playing a piano keyboard. The word "JAZZ" is prominently displayed in white, stylized letters across the piano keys. At the bottom of the page, there are two more video player controls with timestamps 00:26:0 and 00:33:0 0:24.

Enter Draft.js



...Nice Jazz Festival...

{

 type: 'PRONUNCIATION'

 data: {

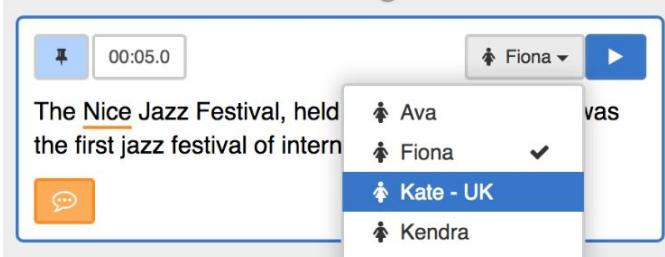
 alias: 'niece'

 }

}

The _{Nice} Jazz Festival

What are the hooks?



componentWillReceiveProps

The Nice Jazz Festival, held annually since 1948

handleBeforeInput

handleDelete

Adding

The Nice Jazz Festival, held annually since 1948 in Nic|

The Nice Jazz Festival, held annually since 1948 in Nice|

The Nice Jazz Festival, held annually since 1948 in Nice|

Search

Text

The Nice Jazz Festival, held annually since 1948,
in Nice

Dictionary

```
...  
{  
  "original": "Nice",  
  "alias": "niece",  
  "id": "58a70cd40e2c5297588595d3",  
},  
...
```

*UTF-8 proof
REGEX*

Search Results

```
[  
  {  
    "id": "58a70cd40e2c5297588595d3",  
    "start": 5,  
    "end": 9,  
  },  
  {  
    "id": "58a70cd40e2c5297588595d3",  
    "start": 52,  
    "end": 56,  
  },  
]
```

The Nice Jazz Festival, held annually since 1948 in Nice

```
[  
  {  
    "id": "58a70cd40e2c5297588595d3",  
    "start": 5,  
    "end": 9,  
  },  
  
  {  
    "id": "58a70cd40e2c5297588595d3",  
    "start": 52,  
    "end": 56,  
  }  
]
```

```
function findEntityRanges(contentBlock) {  
  ...  
}  
  
[ { start: 5, end: 9 } ]
```

The Nice Jazz Festival, held annually since 1948 in Nice|

1. Create pronunciation entity with data

```
{ id: 58a70cd40e2c5297588595d3 }
```

2. Apply entity to the selection at

```
start: 52,  
end: 56
```

The Nice Jazz Festival, held annually since 1948 in Nice|

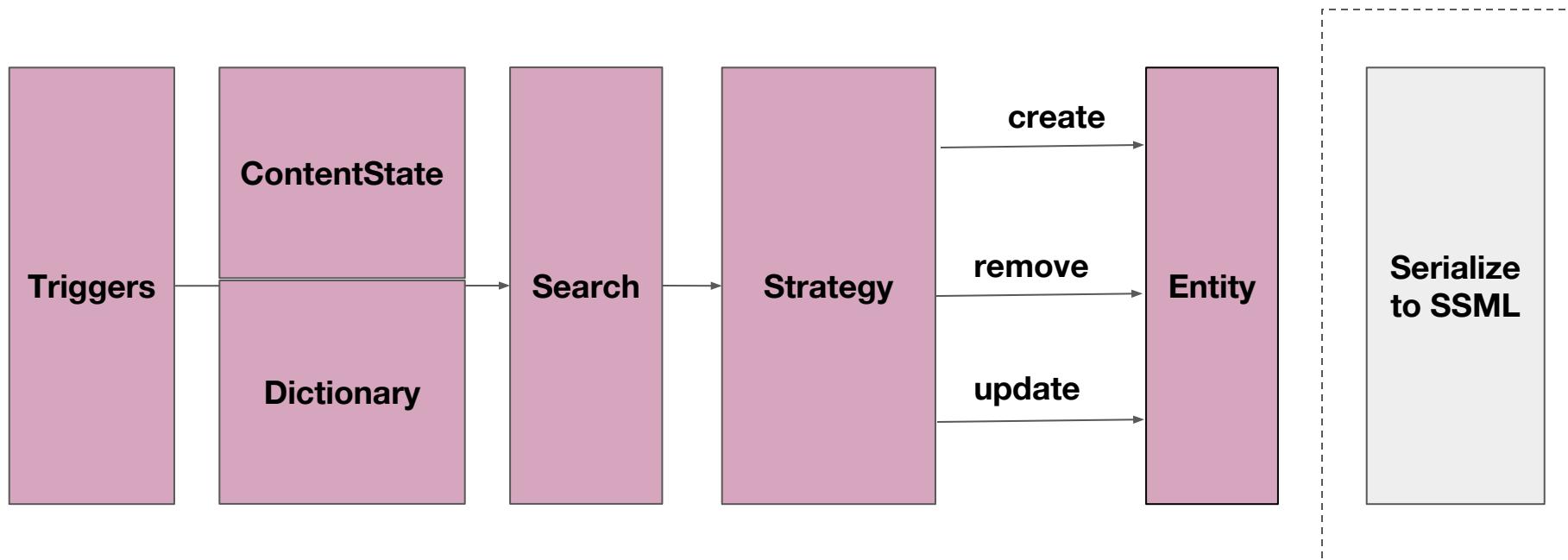
Pronunciation Entity

```
{  
  type: 'PRONUNCIATION'
```

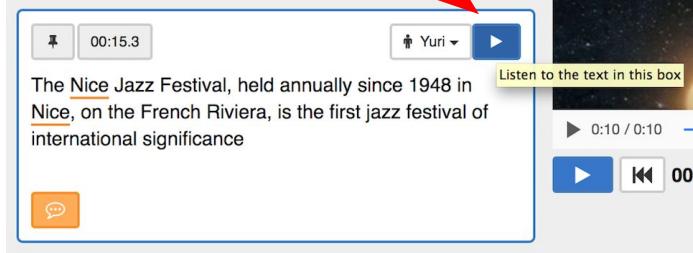
in Nice| in Nic|

```
}
```

Draft Plugin



Serialize to SSML



```
new SSMLSerializer(contentState)
```

```
function toSSML (entity, text) {  
  
  return `<sub alias="${entity.data.alias}">${text}</sub>`  
  
}
```

...

```
<speak
```

```
    version="1.1"
```

```
    xmlns="http://www.w3.org/2001/10/synthesis"
```

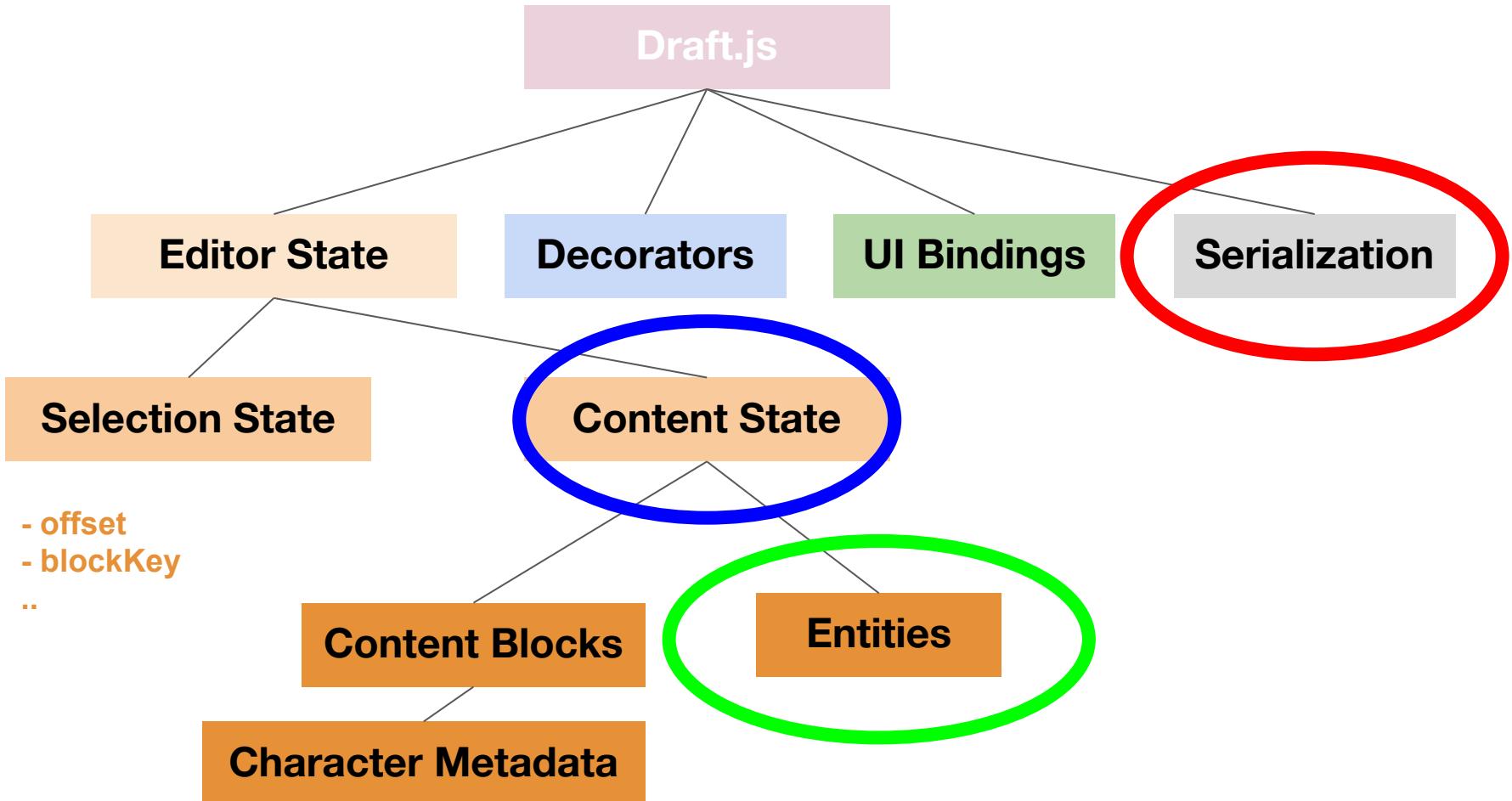
```
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
```

The `_{Nice}` Jazz Festival, held annually since 1948 in
`_{Nice}`, on the French Riviera, is the first jazz
festival of international significance.

```
</speak>
```

...

Creating video from text with Draft.js



- Official docs – <https://facebook.github.io/draft-js/>
- Awesome Draft.js – <https://github.com/nikgraf/awesome-draft-js>
- Slack channel – <https://draftjs.herokuapp.com/>
- Plugins – <https://www.draft-js-plugins.com/>

Thanks!

Get in touch with comments, questions, ideas, etc.

@rob_squires and @alxnorton

http://bit.ly/2lrBSH5



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Robin Pembroke [Follow](#)

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Dec 31, 2016 · 3 min read

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