It’s Boxes All the Way Down!

Elements & Their Relationships

R. Scott Granneman & Jans Carton

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Elements & Family Trees

Bristol School
HAPPY FIRST DAY
2016-17 SCHOOL YEAR!
GOING TO BE A
YEAR !

August Rudolph Granneman
Grandfather
b: 1898-01-18
bp: Cole Camp, Benton County, MO
d: 1973-12-28
dp: Slater, Saline County, MO
m: 1920-10-10
mp: Cole Camp, Benton County, MO

Ella Amelia Mueller
Grandmother
b: 1898-01-23
bp: Cole Camp, Benton County, MO
d: 1977-08-13
dp: Marshall, Saline County, MO

Edgar Charles Scott
Grandfather
b: 1906-05-04
bp: Dunegan, MO
d: 1994-03-11
dp: Marshall, Saline County, MO
m: 1929-11-23
mp: Methodist Parsonage, Napton, MO

Ruth Elizabeth Cromley
Grandmother
b: 1910-08-23
bp: Shackleford, Saline County, MO
d: 2000-10-05
dp: Marshall, Saline County, MO

Ralph Leonard Granneman
Father
b: 1925-06-20
bp: Gilliam, Saline County, MO
d: 1997-03-22
dp: Marshall, Saline County, MO
m: 1956-09-08
mp: First Presbyterian Church, Marshall,...

Betty Sue Scott
Mother
b: 1935-06-28
bp: Marshall, Saline County, MO
d: 2018-06-01
dp: University Hospital and Clinics, Colum...

Frank Jaeger
Father of spouse

Ralph Scott Granneman
Source
b: 1968-06-10
bp: Fitzgibbon Hospital, Marshall, Saline C...

Carol Jaeger
Spouse
b: 1969-04-01
bp: St. Louis, MO

* *Never* my spouse

Finn Scott Granneman Jaeger
Son
b: 2008-12-05
bp: Barnes Hospital, St. Louis, MO

Both children *and* parents

Child only

August Rudolph Granneman
Grandfather
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Source
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Carol Jaeger
Spouse
b: 1969-04-01
bp: St. Louis, MO

Finn Scott Granneman Jaeger
Son
b: 2008-12-05
bp: Barnes Hospital, St. Louis, MO

Both ancestors *and* descendants to Finn

Descendant only

August Rudolph Granneman
Grandfather
b: 1898-01-18
bp: Cole Camp, Benton County, MO
d: 1973-12-28
dp: Slater, Saline County, MO
m: 1920-10-10
mp: Cole Camp, Benton County, MO

Ella Amelia Mueller
Grandmother
b: 1898-01-23
bp: Cole Camp, Benton County, MO
d: 1977-08-13
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b: 1910-08-23
bp: Shackleford, Saline County, MO
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Father
b: 1925-06-20
bp: Gilliam, Saline County, MO
d: 1997-03-22
dp: Marshall, Saline County, MO
m: 1956-09-08
mp: First Presbyterian Church, Marshall,...

Betty Sue Scott
Mother
b: 1935-06-28
bp: Marshall, Saline County, MO
d: 2018-06-01
dp: University Hospital and Clinics, Colum...

Frank Jaeger
Father of spouse

Great-Grandparents

Ralph Scott Granneman
Source
b: 1968-06-10
bp: Fitzgibbon Hospital, Marshall, Saline C...

Carol Jaeger
Spouse
b: 1969-04-01
bp: St. Louis, MO

Grandparents

Finn Scott Granneman Jaeger
Son
b: 2008-12-05
bp: Barnes Hospital, St. Louis, MO

Parents of Finn

Child

How’s the document tree similar to a family tree?

We use the same concepts & terms…

» children and/or parents
» ancestors and/or descendants
» siblings
» parents or grandparents or great-grandparents or …
» all at the same time!

But there are differences too!

How’s the document tree different from a family tree?

With the document tree

» There’s only ever 1 parent
» We only care about certain relationships: children, siblings, & descendants

HTML

```
<h1>The Colour out of
Space<small>H.P. Lovecraft</small>
</h1>

<p>
  West of Arkham the hills rise
wild, and there are <span>valleys
with deep woods that no axe has ever
cut</span>. There are dark narrow
<i>glens</i> where the trees slope
fantastically, and where thin
<i>brooklets</i> trickle without
ever having caught the glint
  of sunlight.
</p>

<blockquote>
  <p>
    On the gentler slopes there are
farms, ancient and rocky, with
squat, moss-coated cottages brooding
eternally over old New England
```

CSS

JS

The Colour out of Space
H.P. Lovecraft

West of Arkham the hills rise wild, and there are valleys with deep woods that no axe has ever cut. There are dark narrow *glens* where the trees slope fantastically, and where thin *brooklets* trickle without ever having caught the glint of sunlight.

> On the gentler slopes there are farms, ancient and rocky, with squat, moss-coated cottages brooding eternally over old New England secrets in the *lee* of great ledges; but these are all vacant now…
>
> The old folk have gone away, and foreigners do not like to live there.

- French-Canadians have tried it,
- Italians have tried it,
- and the Poles have come and departed.

HTML

```
farms, ancient and rocky, with
squat, moss-coated cottages brooding
eternally over old New England
secrets in the <i>lee</i> of great
ledges; <small>but these are all
vacant now…</small>
  </p>
  <p>
    The old folk have gone away, and
foreigners do not like to live
there.
  </p>
</blockquote>

<ul>
  <li>French-Canadians have tried
it,</li>
  <li>Italians have tried it,</li>
  <li>and the Poles have come and
departed.</li>
</ul>

```

CSS

JS

The Colour out of Space

H.P. Lovecraft

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Siblings all share the same parent

The Colour out of Space

Siblings have the same colors

H.P. Lovecraft

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What about descendants?

The Colour out of Space

Some elements are parents, some are children, & some are both

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Boxes

All* HTML elements inside `<body>` generate boxes when they are rendered

* OK, almost all, since some don’t (e.g., `<br>`)

HTML

```
<blockquote>
  <p>
    Ph’nglui mglw’nafh <i>Cthulhu</i> R’lyeh wgah’nagl fhtagn!
  </p>
</blockquote>
```

CSS

```
blockquote {
  border: 4px solid red;
}

p {
  border: 4px dotted blue;
}

i {
  border: 4px dashed green;
}
```

Boxes inside boxes inside boxes…

There are several kinds of boxes, but let’s look at 2 that are very common:

- Block
- Inline

Block-Level Boxes

Block-level boxes…

» line up vertically, relative to parents & siblings
» 100% of the width of their container (e.g., `<body>` or `<div>`)*

* OK, some block-level boxes are not 100%, but we'll get into that later

Some elements that are block boxes (by default):

- `<p>`
- `<ul>`
- `<li>`
- `<video>`
- `<h1>`–`<h6>`
- `<div>` (more on that later in the course)

HTML

```
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Space<small>H.P.
Lovecraft</small></h1>

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caught the glint
  of sunlight.
</p>

<blockquote>
  <p>
    On the gentler slopes there
are farms, ancient and rocky,
with squat, moss-coated cottages
```

CSS

JS

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HTML

```
are farms, ancient and rocky, with
squat, moss-coated cottages
brooding eternally over old New
England secrets in the <i>lee</i>
of great ledges; <small>but these
are all vacant now…</small>
  </p>
  <p>
    The old folk have gone away,
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there.
  </p>
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</ul>

```

CSS

JS

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with deep woods that no axe has
ever cut</span>. There are dark
narrow <i>glens</i> where the
trees slope fantastically, and
where thin <i>brooklets</i>
trickle without ever having caught
the glint
```

CSS

```
h1 {
  margin-top: 0;
}

h1 small {
  display: block;
}
```

JS

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- and the Poles have come and departed.

HTML

```
<h1>The Colour out of
```

CSS

```
/* Background colors */

blockquote {
  background-color: #89CFF0;
}

h1 {
  background-color: #FDFD96;
}

p {
  background-color: #FFC0DB;
}

ul {
  background-color: #E0B0FF;
}

li:nth-child(2) {
  background-color: #CFCFC4;
}
```

JS

The Colour out of Space

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Inline-Level Boxes

Inline boxes…

» are only as wide as their content
» break horizontally across lines when they are too wide to fit their containers, but are still one box
» default value for all boxes

HTML

```
<h1>The Colour out of Space<small>H.P. Lovecraft</small></h1>

<p>
  West of Arkham the hills rise wild, <span>and there are valleys with deep woods that no axe has ever cut</span>. There are dark narrow glens where the trees slope fantastically, and where thin <span>brooklets trickle without ever having caught the glint of sunlight</span>.
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<p>
  On the gentler slopes there are farms, ancient and rocky, <span>with squat, moss-coated cottages brooding eternally</span> over old New England secrets in the lee of great ledges; but these are all vacant now…
</p>
```

CSS

```
span {
  border: 4px solid orange;
}
```

JS

The Colour out of Space

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West of Arkham the hills rise wild, and there are valleys with deep woods that no axe has ever cut. There are dark narrow glens where the trees slope fantastically, and where thin brooklets trickle without ever having caught the glint of sunlight.

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The old folk have gone away, and foreigners do not like to live there.

Inline boxes break across lines, but are still 1 box

All web browsers come with a default CSS file that specifies that certain elements, when rendered, …

- are block
- have specific margins & borders
- & much more!

Some elements that generate inline boxes:

- `<i>` & `<em>`
- `<b>` & `<strong>`
- `<a>`
- `<q>`
- `<small>`
- `<span>` (more on that later in the course)

HTML

```
<h1>The Colour out of Space<small>H.P. Lovecraft</small></h1>

<p>
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```

CSS

```
i {
  background-color: #FFC0DB;
}

small {
  background-color: #FDFD96;
}

span {
  background-color: #89CFF0;
}
```

JS

The Colour out of Space

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West of Arkham the hills rise wild, and there are valleys with deep woods that no axe has ever cut. There are dark narrow *glens* where the trees slope fantastically, and where thin *brooklets* trickle without ever having caught the glint of sunlight.

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Thank you!

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It’s Boxes All the Way Down!

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Changelog

2020-07-12 1.2: Changed or updated all screenshots under *Elements & Family Trees*;

2018-10-01 1.1: Updated theme to Granneman 1.5; small wording changes

2017-11-01 1.0: Created slide deck on 2016-09-16; finalized slides

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