

Rule #1 – viewport

```
<head>
```

```
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
```

```
</head>
```

Without "viewport" on mobile



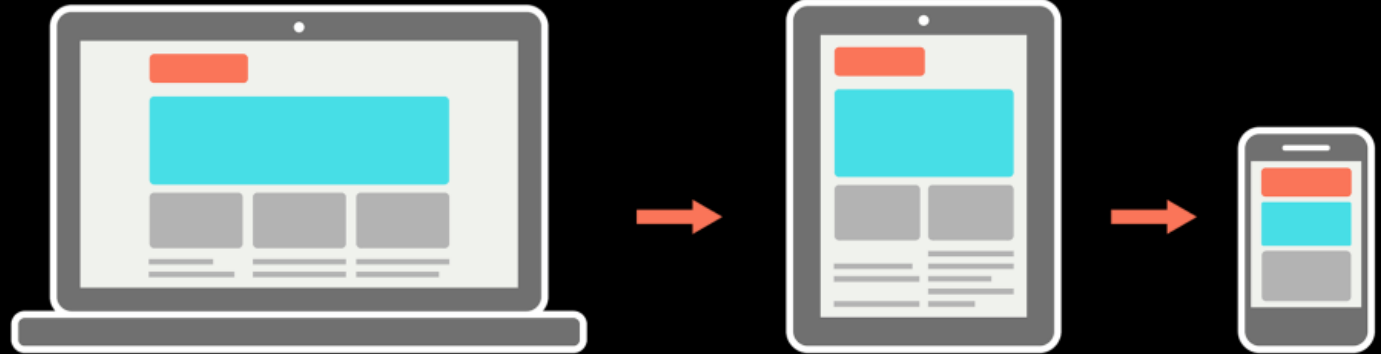
With "viewport" on mobile



Rule #2 – Create Mobile First

Desktop first

```
/* Example */  
/* from 0px until 720px */  
@media (max-width: 720px) {  
  body {  
    background-color: green;  
  }  
}
```



Responsive Web Design

Mobile first

```
/* Example */  
/* from 800px until 420px */  
@media (min-width: 420px) {  
  body {  
    background-color: green;  
  }  
}
```

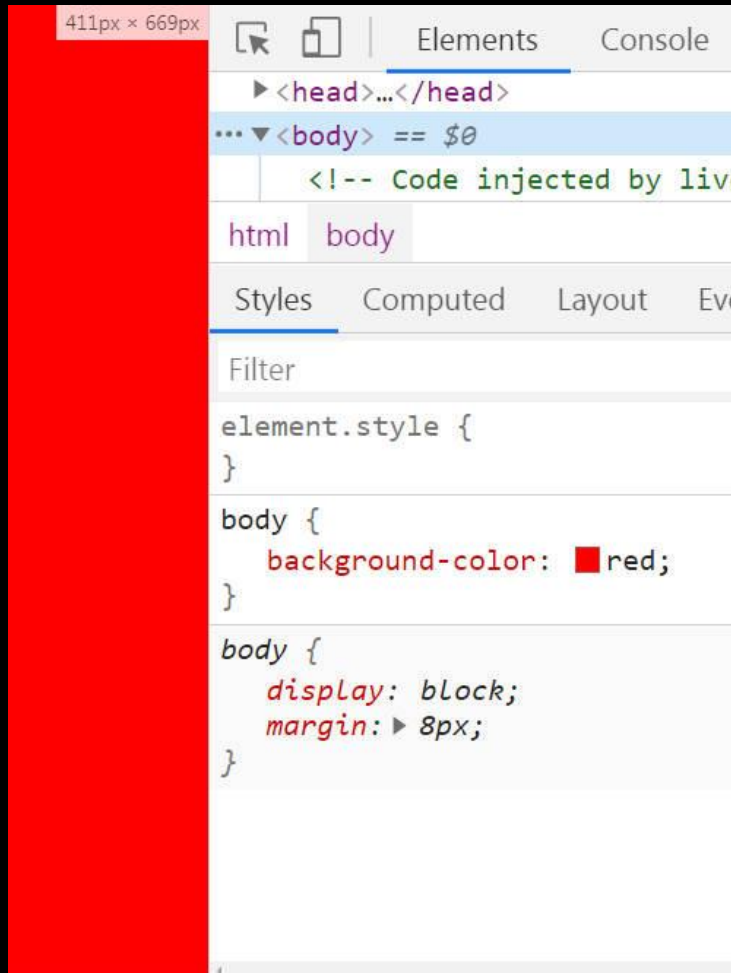


Mobile First Web Design

Rule #3 – use @media queries

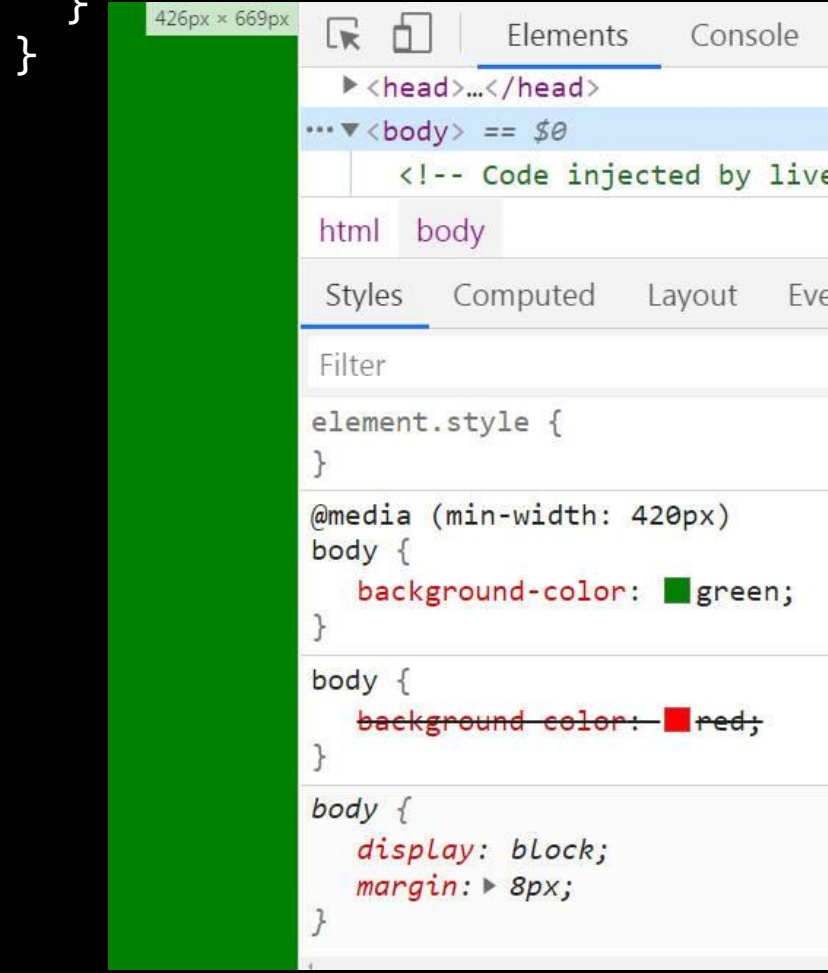
/* Mobile styles */

```
body {  
  background-color: red;  
}
```



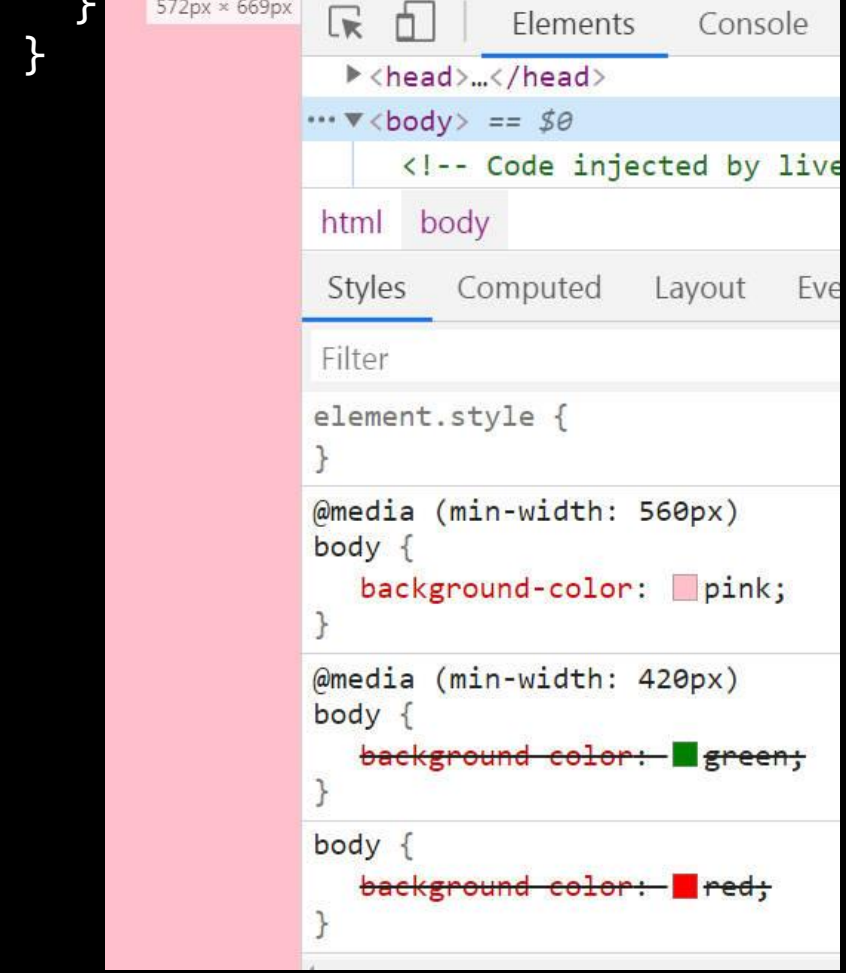
/* Tablet styles */

```
@media (min-width: 420px) {  
  body {  
    background-color: green;  
  }  
}
```

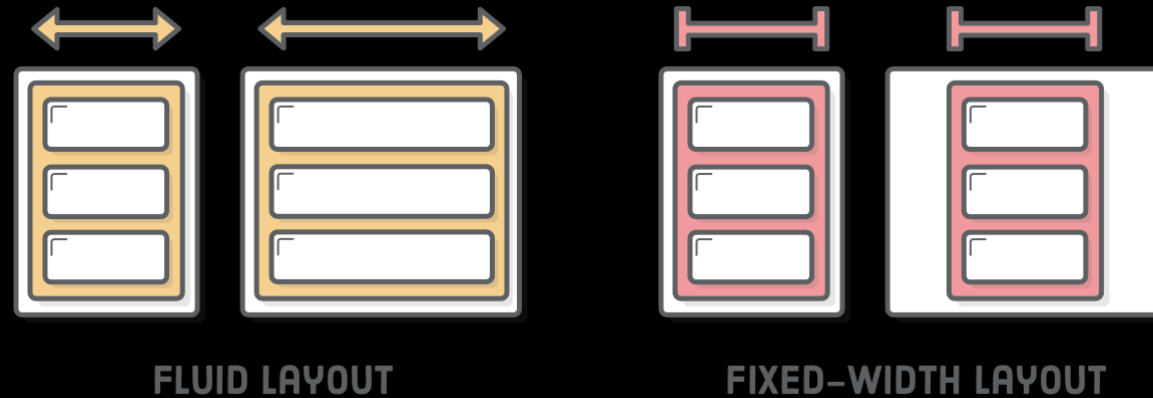


/* Desktop styles */

```
@media (min-width: 560px) {  
  body {  
    background-color: pink;  
  }  
}
```



Rule #4 – Responsive layout



FLUID LAYOUT

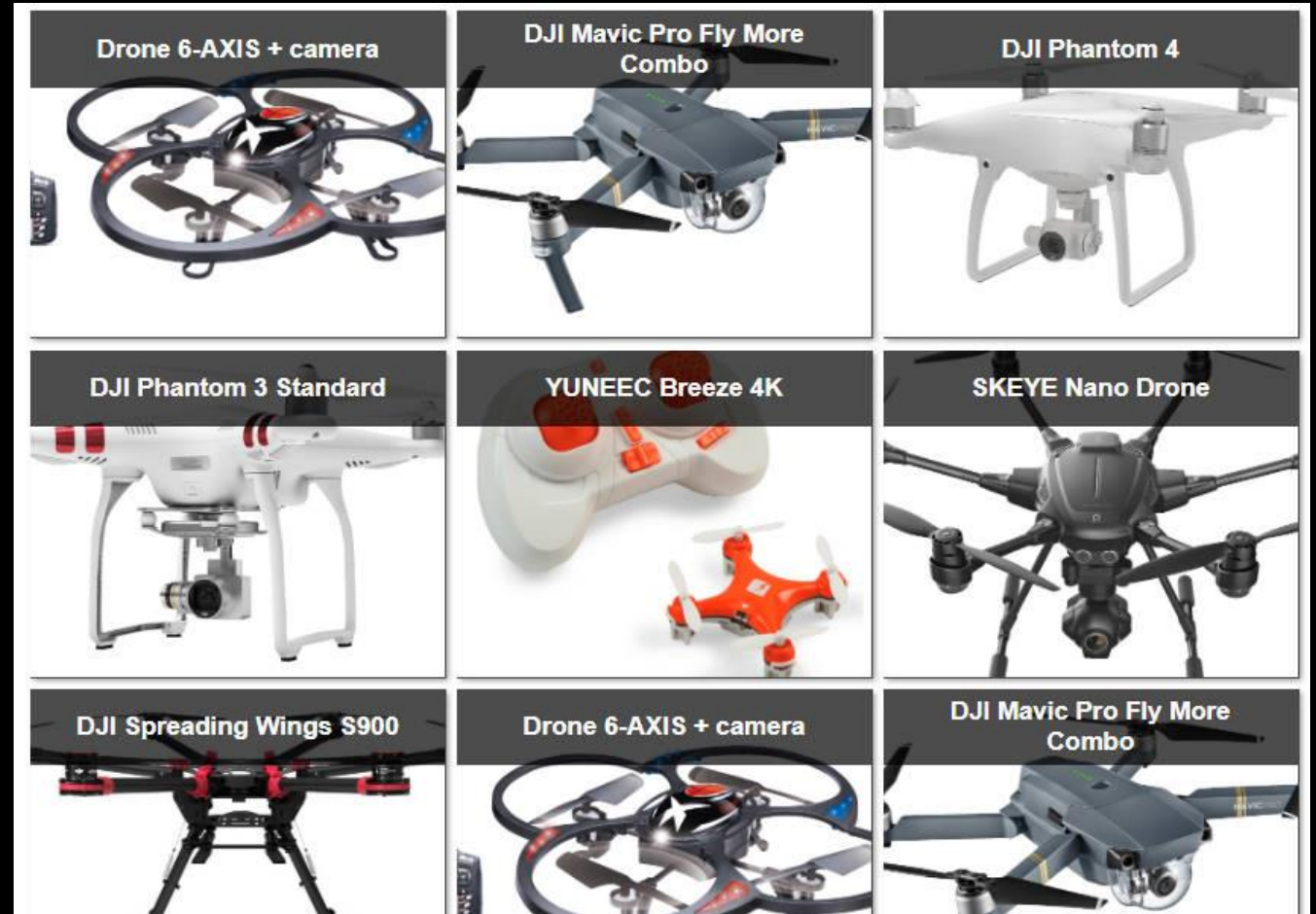
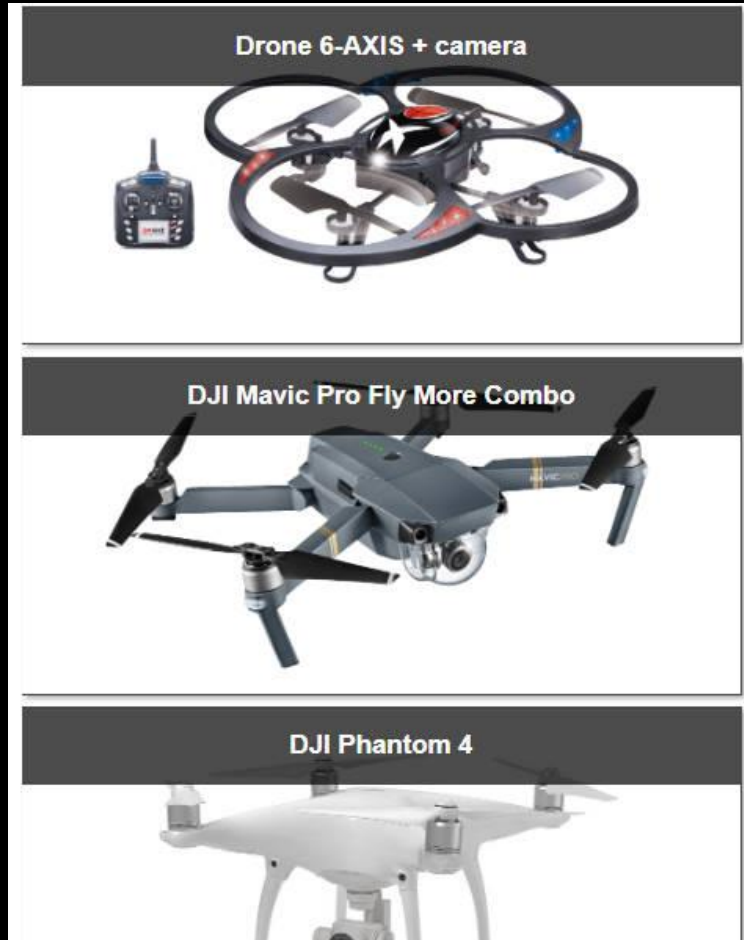
```
.container {  
  width: 100%;  
}
```

FIXED-WIDTH LAYOUT

```
/* Mobile styles */  
.container {  
  max-width: 100%;  
}
```

```
/* Tablet styles */  
@media (min-width: 576px) {  
  .container {  
    max-width: 540px;  
  }  
}
```

Rule #5 – CSS Flexbox Layout



```

23 |
24 |     <div class="container">
25 |         <ul class="cards">
26 |             <li class="cards__item">...
32 |         </li>
33 |             <li class="cards__item">...
39 |         </li>
40 |             <li class="cards__item">...
46 |         </li>
47 |     </ul>
48 | </div>
49 |

```

/* Mobile styles */

```

.container {
  max-width: 100%;
}
.cards {
  display: flex;
  flex-direction: column;
}
.cards__item {
  width: 100%;
}

```

/* Tablet styles */

```

@media (min-width: 576px) {
  .container {
    max-width: 540px;
  }
  .cards {
    flex-direction: row;
    flex-wrap: wrap;
  }
  .cards__item {
    width: 50%;
  }
}

```

/* Desktop styles */

```

@media (min-width: 768px) {
  .container {
    max-width: 720px;
  }
  .cards__item {
    width: 33.33%;
  }
}

```


Rule #5 – box-sizing: border-box



div.box 500 × 400

500 x 400

Elements Console Sources Network >> | ⚙️ ⋮ ✕

```
▶ <head>...</head>
▼ <body>
... <div class="box"></div> == $0
    <!-- Code injected by live-server -->
    ▶ <script type="text/javascript">...</script>
```

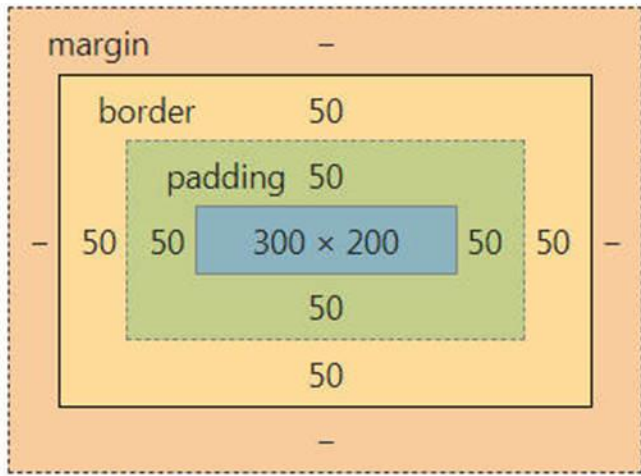
html body div.box

Styles Computed Layout Event Listeners DOM Breakpoints >>

Filter :hov .cls + ▢

```
element.style {
}

.box {
  width: 300px;
  height: 200px;
  padding: 50px;
  border: 50px solid yellowgreen;
  background-color: tomato;
  box-sizing: content-box;
}
```



margin -

border 50

padding 50

50 50 300 × 200 50 50

50 50

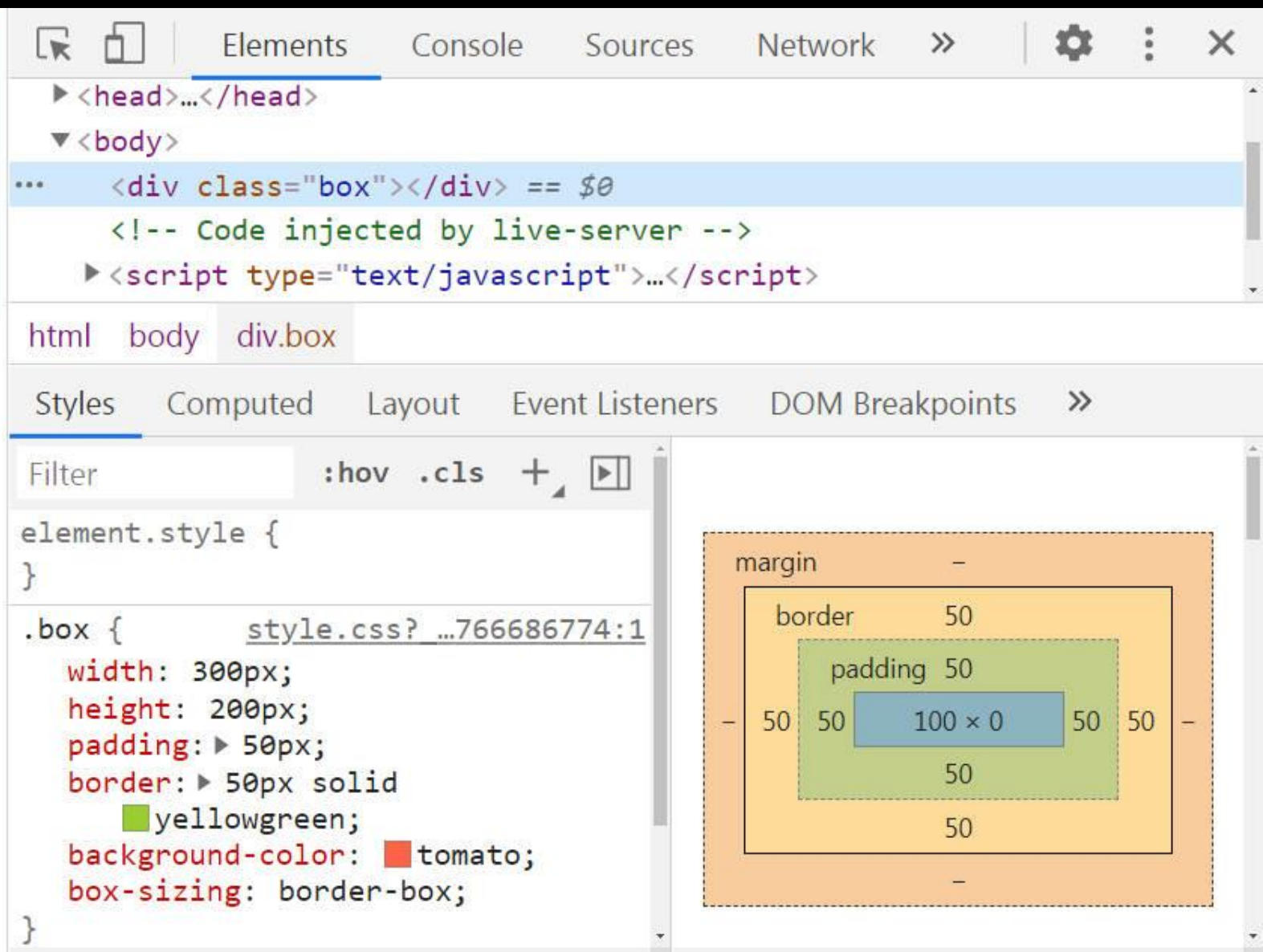
```
* {  
  box-sizing: border-box;  
}
```



div.box 300 x 200

300 x 200

OK



The screenshot shows the browser's developer tools with the 'Elements' panel selected. The DOM tree shows a `<div class="box"></div>` element. The 'Styles' panel shows the following CSS rules:

```
element.style {  
}  
  
.box {  
  width: 300px;  
  height: 200px;  
  padding: 50px;  
  border: 50px solid yellowgreen;  
  background-color: tomato;  
  box-sizing: border-box;  
}
```

On the right, the 'Layout' panel shows a visual box model diagram. It consists of three nested rectangles:

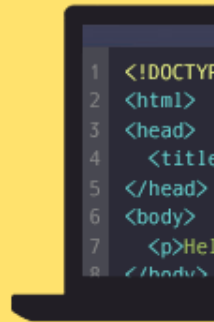
- Margin:** The outermost rectangle, colored orange, with a width of 300px and height of 200px.
- Border:** The middle rectangle, colored yellowgreen, with a width of 200px and height of 100px. It has a solid border of 50px.
- Padding:** The innermost rectangle, colored blue, with a width of 100px and height of 50px. It has a padding of 50px.

The diagram also shows the dimensions of each layer: the border is 50px on all sides, and the padding is 50px on all sides.

Rule #5 – responsive images



HTML5



Elements Console Sources >> ⚙️ ⋮ ✕

```
<head>...</head>
<body>
   == $0
  <!-- Code injected by live-server -->
  ...
</body>
```

html body **img.image**

Styles Computed Layout Event Listeners DOM Breakpoints >>

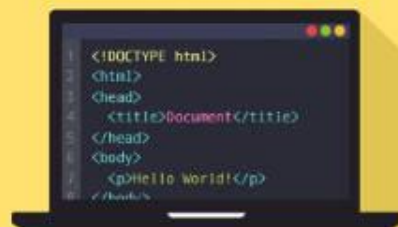
Filter :hov .cls + ▶

```
element.style {
}

.image { style.css? ...768949003:1
  max width: 100%;
}
```

margin -
border -
padding -
800 × 300

```
img {  
  max-width: 100%;  
}
```



Elements Console Sources >> | ⚙️ ⋮ ✕

```
▶ <head>...</head>  
▼ <body>  
...  == $0  
  <!-- Code injected by live-server -->
```

html body **img.image**

Styles Computed Layout Event Listeners DOM Breakpoints >>

Filter :hov .cls + ▢

```
element.style {  
}  
  
.image { style.css? ...768949003:1  
  max-width: 100%;  
}
```

margin -
border -
padding -
561 × 210.375