

AN EXAMPLE DOM PROJECT

AFTER THIS PRESENTATION

- You'll have a stronger appreciation of DOM handling
- You'll have a stronger appreciation of JavaScript

THIS PROJECT USES

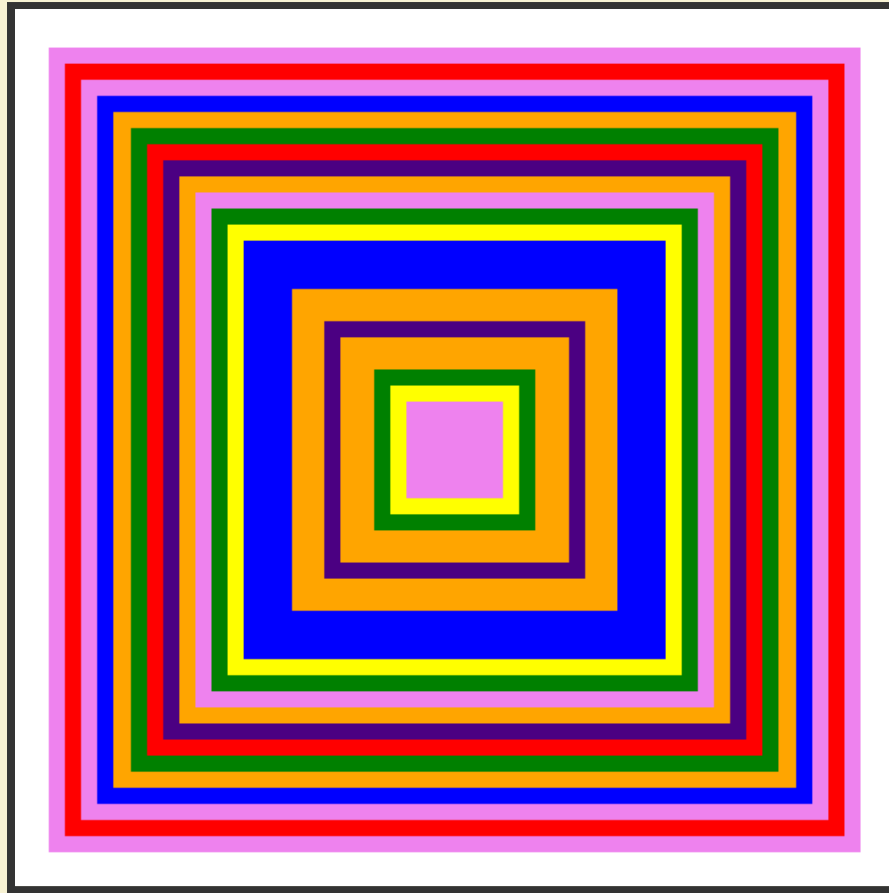
function getElementById() Math.random()

onload createElement() Math.floor()

while appendChild()

STRENGTHENING OUR UNDERSTANDING

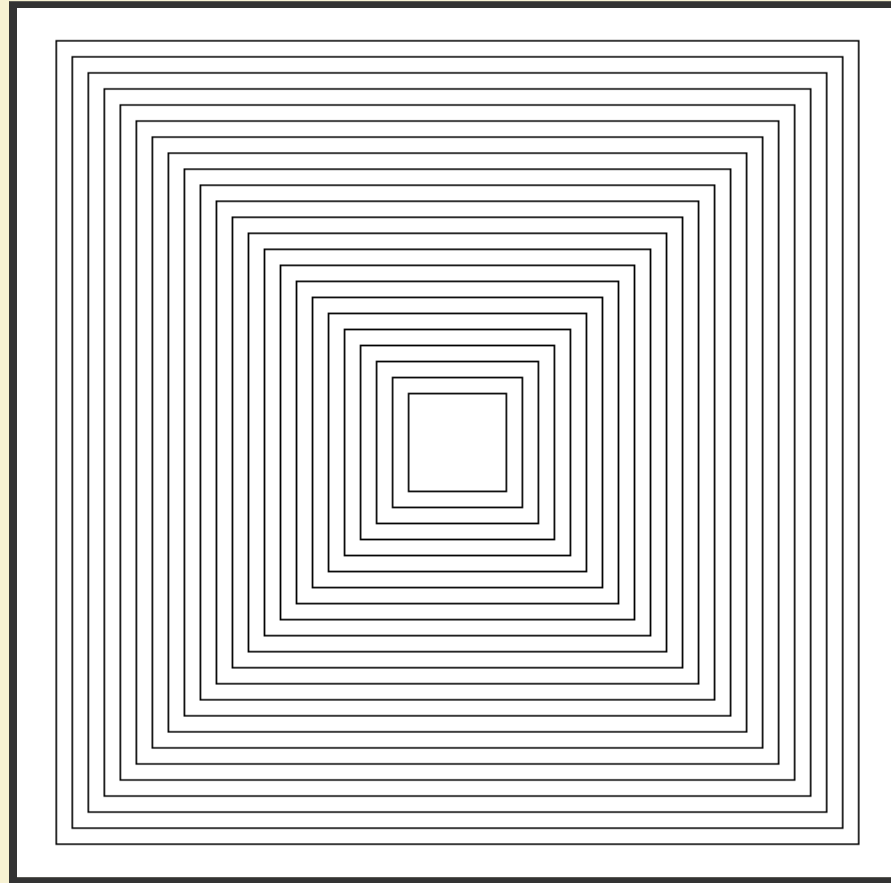
- Let's use the techniques we have learned so far
- We will generate a colourful pattern
- The pattern repeatedly re-generates itself



[Click here to open the example](#)

HOW IT WORKS

- A series of squares is generated by JavaScript
- Each square is a `div`
- Each square has a different top, left, width and height



Click [here](#) to open the example

HTML PART

```
<!doctype html>
<html><head>
  <title>An Example Project</title>
  <meta http-equiv="refresh" content="1">
  <style>
    div {position:absolute}
  </style>
</head>
<body id="theBody" onload="show_pattern()">
  <script src="08_dom_colorful_pattern_js.js">
  </script>
</body>
</html>
```


- The main code is triggered when the web page is loaded:

```
<body id="theBody" onload="show_pattern()">
```

- The actual code is stored in another file:

```
<script src="08_dom_colorful_pattern_js.js">  
</script>
```

- This tells the browser to reload the page every second:

```
<meta http-equiv="refresh" content="1">
```

JAVASCRIPT OVERVIEW

- Set up the variables
- Inside the loop:
 1. Generate the `div` node
 2. Set the `div` node attributes
 3. Add the `div` node to the body
 4. Adjust variables ready for the next iteration

body element

```
<body id="theBody">
```

div element

```
position:absolute
```

```
top:25px
```

```
left:25px
```

```
height:300
```

```
width:300
```

```
background:...
```

div element

```
position:absolute
```

```
top:35px
```

```
left:35px
```

```
height:280
```

```
width:280
```

```
background:...
```

div element

```
position:absolute
```

```
top:45px
```

```
left:45px
```

```
height:260
```

```
width:260
```

```
background:...
```

...

SET UP THE VARIABLES

```
var top_position = 25, left_position = 25;  
var width = 300, height = 300;  
var color_list = ["red", "orange", "yellow",  
                 "green", "blue", "indigo", "violet"];
```

WHILE LOOP STRUCTURE

```
while (width > 50) {  
    // all the following code goes here  
}
```

1. GENERATE THE DIV NODE

```
var this_div = document.createElement("div");
```

2. SET THE DIV NODE ATTRIBUTES

```
var random_color = Math.random() * 7;  
random_color = Math.floor(random_color);
```

```
this_div.style.top = top_position + "px";  
this_div.style.left = left_position + "px";  
this_div.style.width = width + "px";  
this_div.style.height = height + "px";  
this_div.style.background =  
    color_list[random_color];
```

3. ADD THE DIV NODE TO THE BODY

```
var the_body = document.getElementById("theBody");  
the_body.appendChild(this_div);
```


4. ADJUST VARIABLES

```
top_position += 10;  
left_position += 10;  
width -= 20;  
height -= 20;
```

```
function show_pattern(){
  var top_position = 25, left_position = 25;
  var width = 500, height = 500;
  var color_list = ["red", "orange", "yellow", "green", "blue", "indigo", "violet"];
  var the_body = document.getElementById("theBody");

  while(width > 50) {
    var this_div = document.createElement("div");
    var random_color = Math.random() * 7;
    random_color = Math.floor(random_color);
    this_div.style.top = top_position + "px";
    this_div.style.left = left_position + "px";
    this_div.style.width = width + "px";
    this_div.style.height = height + "px";
    this_div.style.background = color_list[random_color];
    the_body.appendChild(this_div);
    top_position += 10; left_position += 10;
    width -= 20; height -= 20;
  }
}
```