Images and Mappings

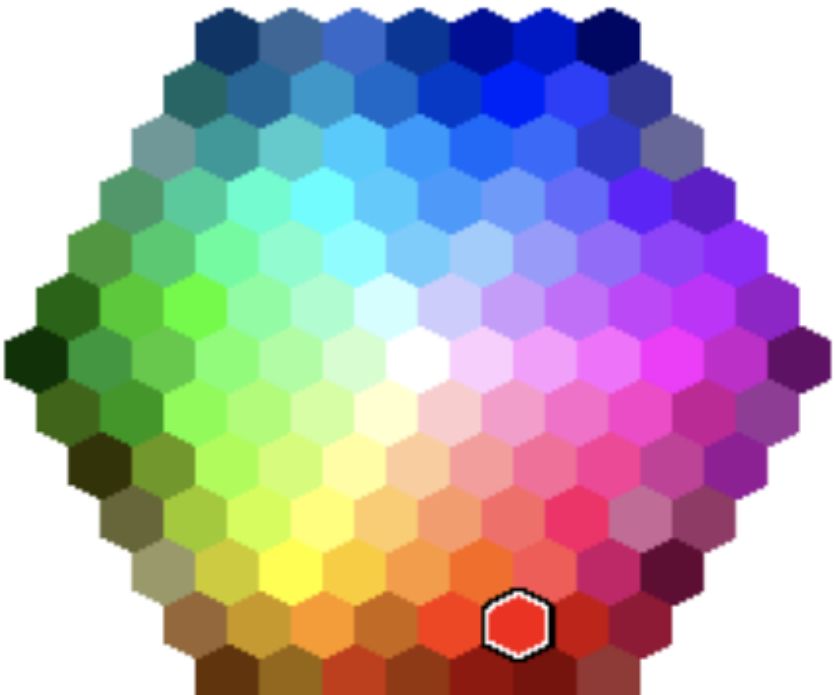
In this lesson we will study images in relation to mappings.
Let's begin!

WE'LL COVER THE FOLLOWING

In Chapter 3 (Exercise 2-17) you learned how you can turn your images into links by surrounding an `<img>` tag with an `<a>` tag. Images provide another great feature, the ability to define a number of hot-spots, each of them having a link of its own.

For example, you can display a color picker image where each separate color is a hot-spot, and when the user clicks any of them, you'll use the link to pick up the appropriate color.

Another example is a map of the world, where you use each country as a hot-spot to show related sales information.



A color picker defined as a single image

To achieve this behavior, you need to define a map and assign it to an image, as shown in this markup snippet:

index.html

```
<img src="myimage.png" usemap="#mymap" />
<map name="mymap">
  <area ... />
  <area ... />
  <!-- More area tags -->
  <area ... />
</map>
```

The `<map>` tag embeds one or more elements that each define a hot-spot. A `<map>` has a name attribute that can be used to assign the map to an image with the `<img>` tag's `usemap` attribute. As the markup snippet shows, you need to put a number mark (`#`) in front of the map's name when referring to it from `usemap`.

A hot-spot definition contains a clickable region within the image and the hyperlink information. The `shape` and `coords` attributes of `<area>` hold the information about the hot-spot's region.

The value of shape can be any of `"rect"`, `"circle"`, or `"poly"` to define the area as a rectangle, circle, or polygon, respectively. Depending on shape's value, `coords` define a sequence of coordinate information separated with a comma. If shape is set to `"rect"`, `coords` contains two points in the form of `"x1, y1, x2, y2"`. Use two points and a radius value for coords (in the form of `"x, y, rad"`) when shape is set to `"circle"`.

If the area is defined as a polygon (shape is set to "poly"), you need to specify the coordinates of all corners of the polygon, in the form of `"x1, y1,..., xn, yn"`). The lines of the following snippet define a rectangle, a circle (with a radius of 28), and a polygon (triangle), respectively:

index.html

```
<area shape="rect" coords="10,10,54,86" />
```

```
<area shape="circle" coords="102,43,28" />
<area shape="poly" coords="84,16,21,38,114,38
" />
```

To demonstrate using image maps, Listing 5-4 shows you an HTML page definition. This listing can be found in the Exercise-05-04 folder within this chapter's source code download. Open the project within this folder to see how it works.

Listing 5-4: Adding hot-spots to images

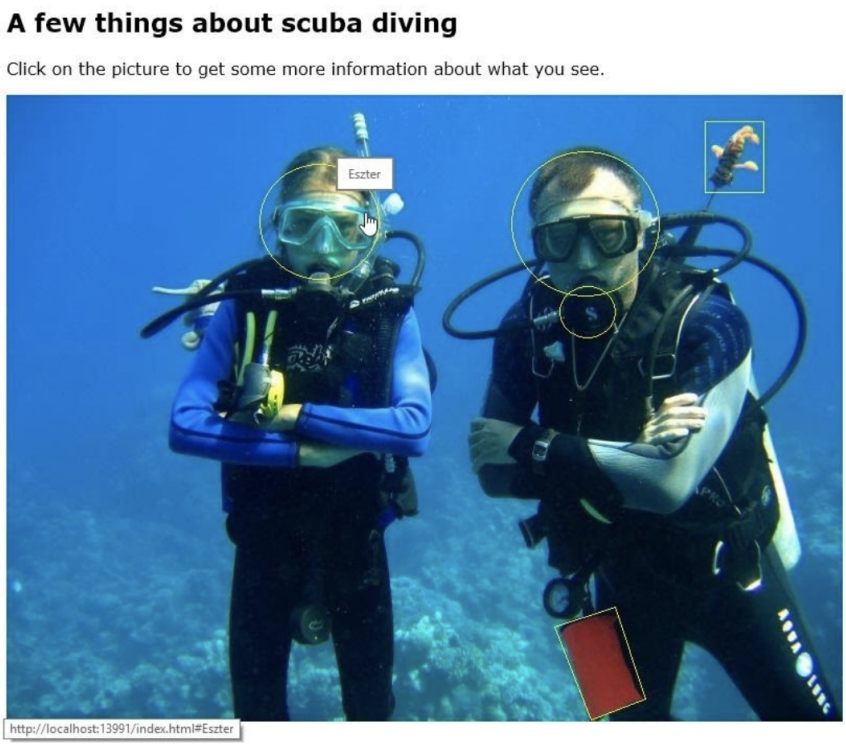
```
<!DOCTYPE html>
<html>
<head>
  <title>Images and mappings</title>
  <link href="style.css" rel="stylesheet" />
</head>
<body>
  <h2>A few things about scuba diving</h2>
  <p>
    Click on the picture to get some more
    information about what you see.
  </p>
  <img src="/images/MappedPictureWithOverlay.JPG"
    usemap="#scubamap"/>
  <map name="scubamap">
    <area shape="rect" coords="668,25,723,93"
      title="Tiger" href="#Tiger" alt="Tiger" />
    <area shape="circle" coords="553,122,71"
      title="Istvan" href="#Istvan" alt="Istvan" />
    <area shape="circle" coords="299,121,57"
      title="Eszter" href="#Eszter" alt="Eszter" />
    <area shape="circle" coords="555,210,26"
      title="Second Stage"
      href="#SecondStage" alt="Second Stage" />
    <area shape="poly"
      coords="524,509,558,598,609,578,582,490"
      title="Decompression Buoy"
      href="#DecoBuoy" alt="Deco buoy" />
  </map>
  <h2 id="Istvan">Istvan</h2>
  <p>
    Istvan is a NASE Dive Master with more than 400
    registered underwater dives.
  </p>
  <h2 id="Eszter">Eszter</h2>
  <p>
    Eszter is a PADI Open Water Diver with about 20
    registered underwater dives.
  </p>
  <h2 id="Tiger">Tiger</h2>
  <p>
    Tiger is Istvan's underwater buddy escorting
    him tied to his tank.
  </p>
  <h2 id="SecondStage">Second Stage</h2>
```

```
  <p>
    The second stage is an important part of the
    scuba equipment, you breath the air through it.

  </p>
  <h2 id="DecoBuoy">Decompression Buoy</h2>
  <p>
    Decompression buoy is used to send to the surface
   while you are under water for your safety stop.
  </p>
</body>
</html>
```

This code uses an image with marked hot-spots so that you can find them easily. When you move the mouse pointer over any hot-spot, the pointer changes to a hand, and a tooltip shows the title of the corresponding hot-spot, or the title attribute of the related `<area>` element.

When you click a hot-spot, it takes you to the part of the page that describes germane details. The image shown below demonstrates this sample page in action.



An image with hot-spots

The `<area>` tag defines a few attributes that describe the related hyperlink. These are `alt`, `href`, `hreflang`, `media`, `rel`, `target`, and `type`; they have the same semantics as the tags of `<a>` as described in Chapter 3 (Adding Links).

> 📜**NOTE:** You can easily get coordinates with the help of drawing or image processing programs. As you move the cursor while drawing a rectangle, a circle, or a polygon, these apps generally display your coordinates. Put down these coordinates, and when you're finished drawing all shapes, use your notes to specify the coords attributes of `<area>` tags.

In the *next lesson*, we learn about visualizing progress.

Stay tuned! :)