The ismap and usemap attributes (OPTIONAL)

Note: *This section is optional material included for the curious. It will not appear on any graded question.*

Important: The attributes we will see in this unit - `ismap` and`usemap` are **image attributes**. Since they use the link tag, having learned hyperlinks, now would be a good time to explore them. Be sure to watch the video at the end of this unit.

Adding the `ismap` or `usemap` attributes to the <img> tag means that the picture is an image with clickable areas. Imagine a picture of a world map where different countries on the map can be clicked and it navigates to another page like the country's wikipedia page. Simply put, we say such an image is mapped. Here is an example of an image-map.

The 'ismap' attribute

```
<img src="images/logo.png" alt="ismap tutorial" ismap>
```

`ismap` is a **boolean attribute** i.e. its value is either true or false. Thus, just the presence of the attribute indicates that it is a mapped image. To be more precise, we say it is a server-side image-map.

An <img> tag with the `src` and `ismap` attributes creates an image with the image source file and indicates it is a server-side image-map. But how will your code know that if you click on a part of your image, i.e. 'Australia in a world map', it should navigate to the country's Wikipedia page? We need to create a map file with these details and then add the location of this map file using the anchor element. Here is a code sample:

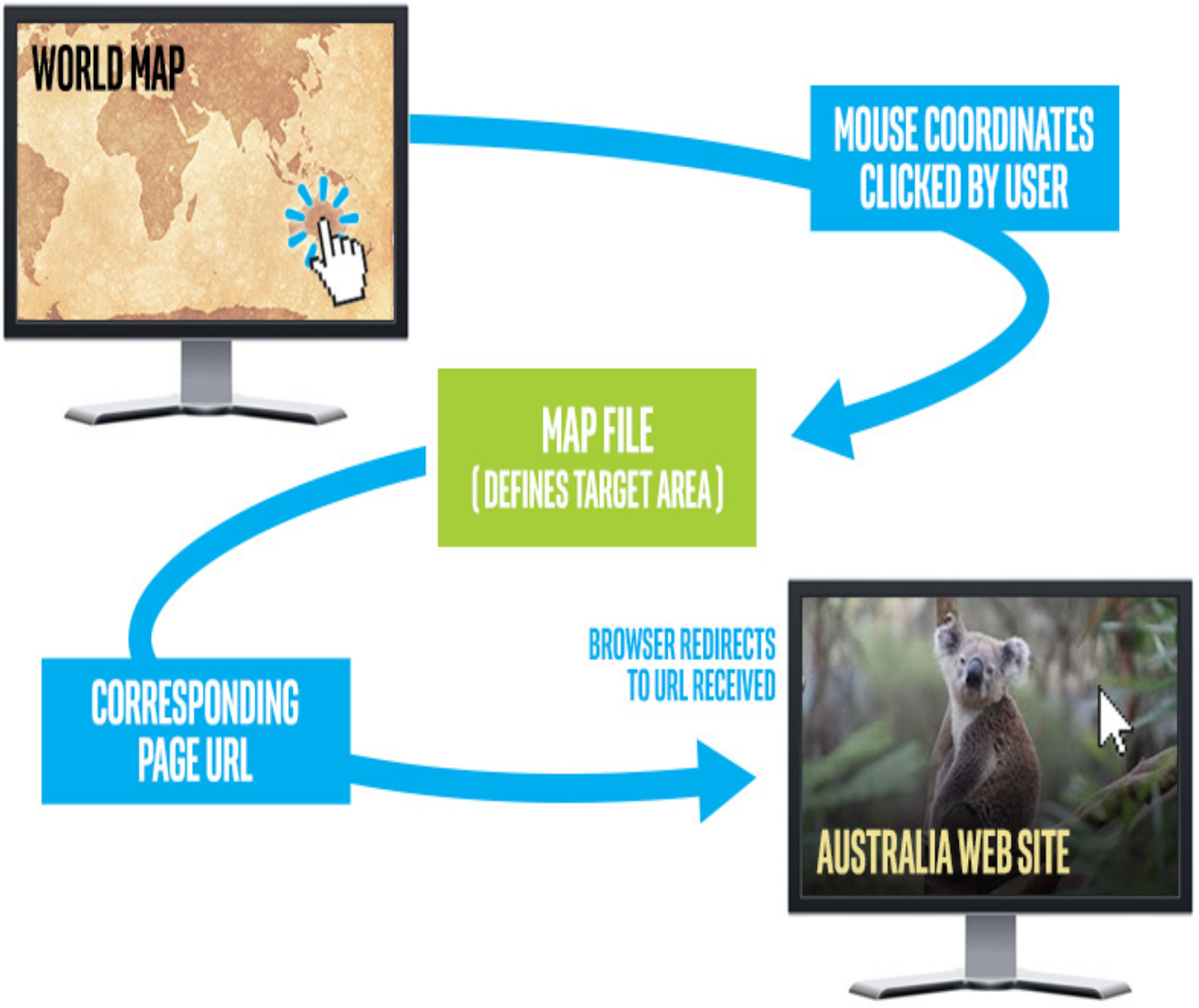
```
<a href="/ismap-image/ismap.cgi"target="_self">
   <img src="images/logo.png" alt="ismap tutorial" ismap>
</a>
```

Here, the `href` attribute points to the location of the map file.`target` attribute indicates

where the page it navigates to should open. '_self' will open in the same page whereas '_blank' will open it in a new tab or window.

`ismap` only works if the <img> tag is used within the anchor element like in the code above. This is important because without a link to the target map file, it has no idea what to do with your `ismap`specification.

Let's look at how the code above works.



Let's go back to our world map example where clicking on different parts of the image will take you to a page about the country you clicked on. The map file `'/ismap-image/ismap.cgi'` defines target areas. We can define the image in terms of coordinates. When a user clicks on a part of the image, we can calculate the exact 'x' and 'y' coordinates of the image that was clicked. When the user clicks, the browser will consult with the map file on the server (specified in the anchor tag), by sending these mouse click

coordinates to the server. Based on these coordinates, the map file will return the Web page it should navigate to, to the browser.

Read more about image maps on wikipedia. You might be inclined to assume an image map will only be used for an actual map. But there are a lot more use cases for it.
The Atlas Magazine is a good example.

Try this: Navigate to the Atlas magazine and explore the header image with a 'laughing budha' like image. The image acts as a site navigator. Clicking on different parts of the image will bring you to different parts of the Web page. You can use image maps in many creative ways.

The 'usemap' attribute

`usemap` is a lot like `ismap` and is more widely used. `ismap` deals with server-side image-maps whereas `usemap` deals with client-side image-maps.

- Server-side image-maps: use separate map files that have to be downloaded. They depend on the server for translating the request. They also create additional network traffic.
- Client-side image-maps: reside within an HTML document. The browser takes care of the translation (translating mouse coordinates clicked to corresponding Web pages).

Client-side maps are becoming increasingly popular. `usemap` is NOT of type boolean. It takes in the name of the map with a '#' character preceding it.

```
<img src="navigator.jpg" alt="Pages in this Web
site" usemap="#navigatormap">
```

Like `ismap`, `usemap` cannot be used by itself. In 'ismap', we used the anchor tag to specify the map file. In `usemap`, we use the **<area>**element as a child of **<map>** element to specify the coordinates and the page it should navigate to. The `usemap` value should match the map element's name or id attribute.

```
<img src="images/crossroads.jpg"alt="Crossroads" usemap="#
navigatormap">
```

```
<map name="navigatormap">
  <area shape="rect" coords="0,0,195,439"href="https://en.
wikipedia.org/wiki/Millery"alt="Millery">
  <area shape="rect" coords="196,0,390,439"href="https://e
n.wikipedia.org/wiki/Nomeny"alt="Nomeny">
</map>
```

<map> - defines a client-side image map and is used to create a relationship between the image and the map by matching the map name and usemap's value. It contains a set of area elements.

<area> - defines the areas that can be clicked and the pages it should navigate to. Typically takes the shape of the area, coordinates of the area, URL of the page it should redirect to and the 'alt' attribute (short description).

The shape attribute in the <area> tag has four values -

- circle - The clickable area is a circle. The number of coordinates will be 3. E.g. coords="89,52,6". The first two is the coordinates of the circle center and the last is the radius.
- rect - The clickable area is a rectangle. The number of coordinates will be 4. E.g. coords="0,0,195,439". This is the x & y coordinates of the top left corner and the x & y coordinates of the bottom right corner.
- poly - The clickable area is a polygon of any number of sides. This shape is very flexible and takes as many pairs of coordinates as you need to form your polygon. E.g. coords="277,85,322,87,275,173,269,138". The last set of coordinates can match the first set. If it doesn't, the browser will automatically match it for you to close the polygon.
- default - The clickable area is the whole image.

Read more about the area tag here.

There are several online image map generator tools that save you the trouble of mapping coordinates. Check them out!

Here is a working example of `usemap`.

```
<img src="images/crossroads.jpg"alt="Crossroads" usemap="#
```

```
navigatormap">
<map name="navigatormap">
  <area shape="rect" coords="0,0,195,439"href="https://en.
wikipedia.org/wiki/Millery"alt="Millery">
  <area shape="rect" coords="196,0,390,439"href="https://e
n.wikipedia.org/wiki/Nomeny"alt="Nomeny">
</map>
```

Result:

Try this: Click on the left and right side of the images to check out how `usemap` works :) Remember to navigate back to the course!

Point to note: If the img is inside an <a> or <button> element, clicking on it will be interpreted as clicking on the link or button and usemap will not work.

'ISMAP' & 'USEMAP' ATTRIBUTES INTEL XDK ACTIVITY

To get a better understanding on the usemap attribute, download the Image Map

sample (download has been tested on Chrome, Safari and Firefox) available as an Intel XDK project. **www/index.html.**

Learn how to import an Intel XDK project here.

If you are not using Intel XDK, you can still access this sample.

- Download the zip file and extract it
- index.html can be found in ImageMaps/www/index.html
- Open index.html with the HTML editor of your choice

It showcases two image maps that can be used for page navigation with the areas mapped using 'rect' and 'poly' shapes. The coordinates were generated using an online image map generator tool.

Experiment with it and try your own image map variations.

Knowledge check 2.5.4 (not graded)

The map element's name or id attribute should match the _____ attribute's value.

- ismap
- coord
- usemap
- href

CHECK
