

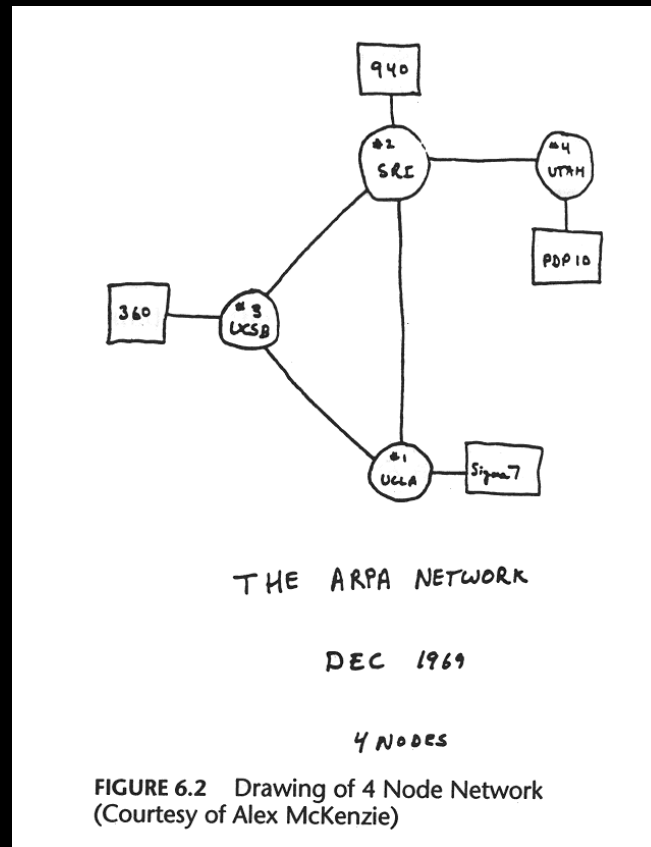
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Lesson 08:

The Internet

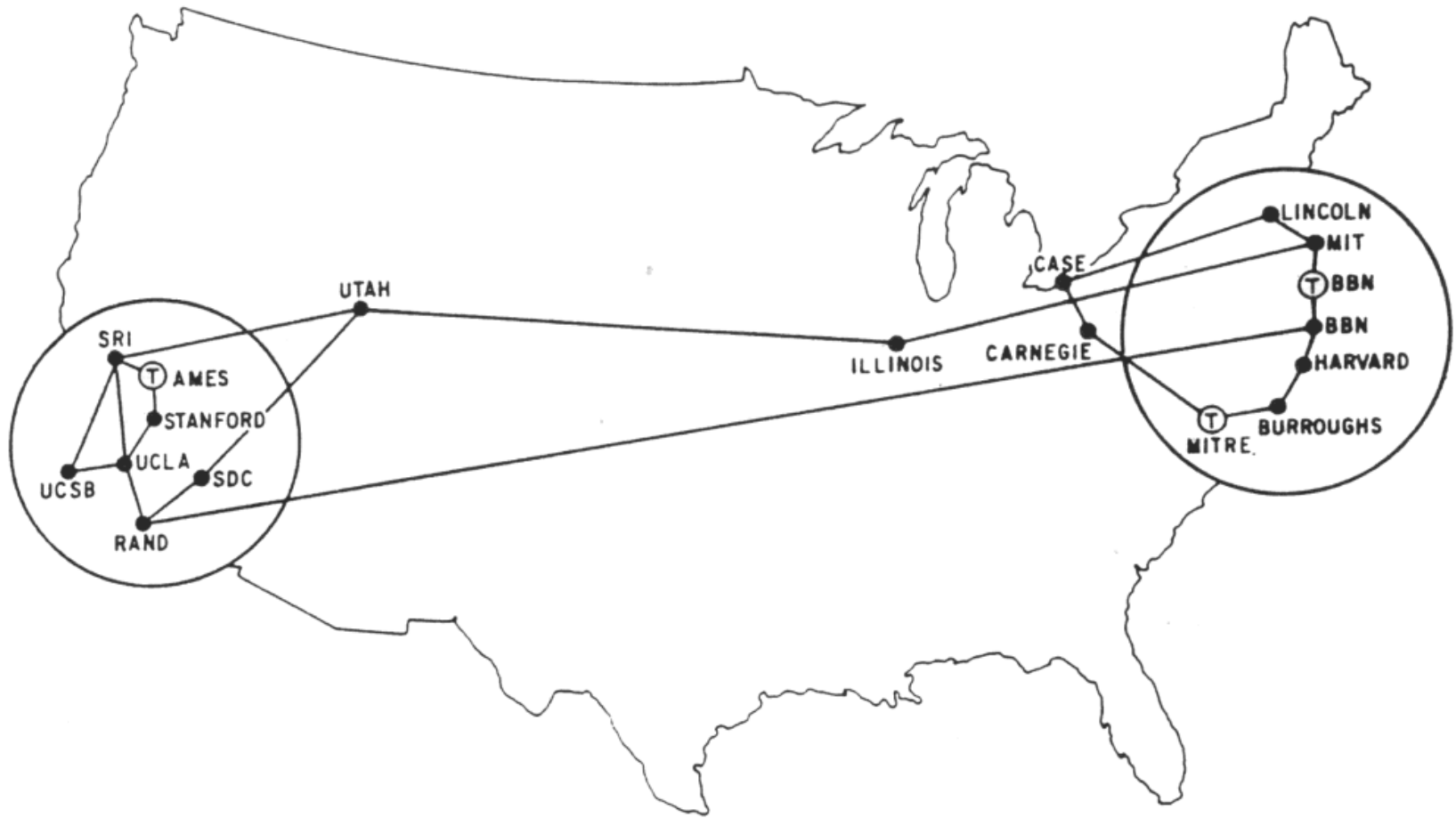
Physical Architecture of the Web

Arpanet 1969



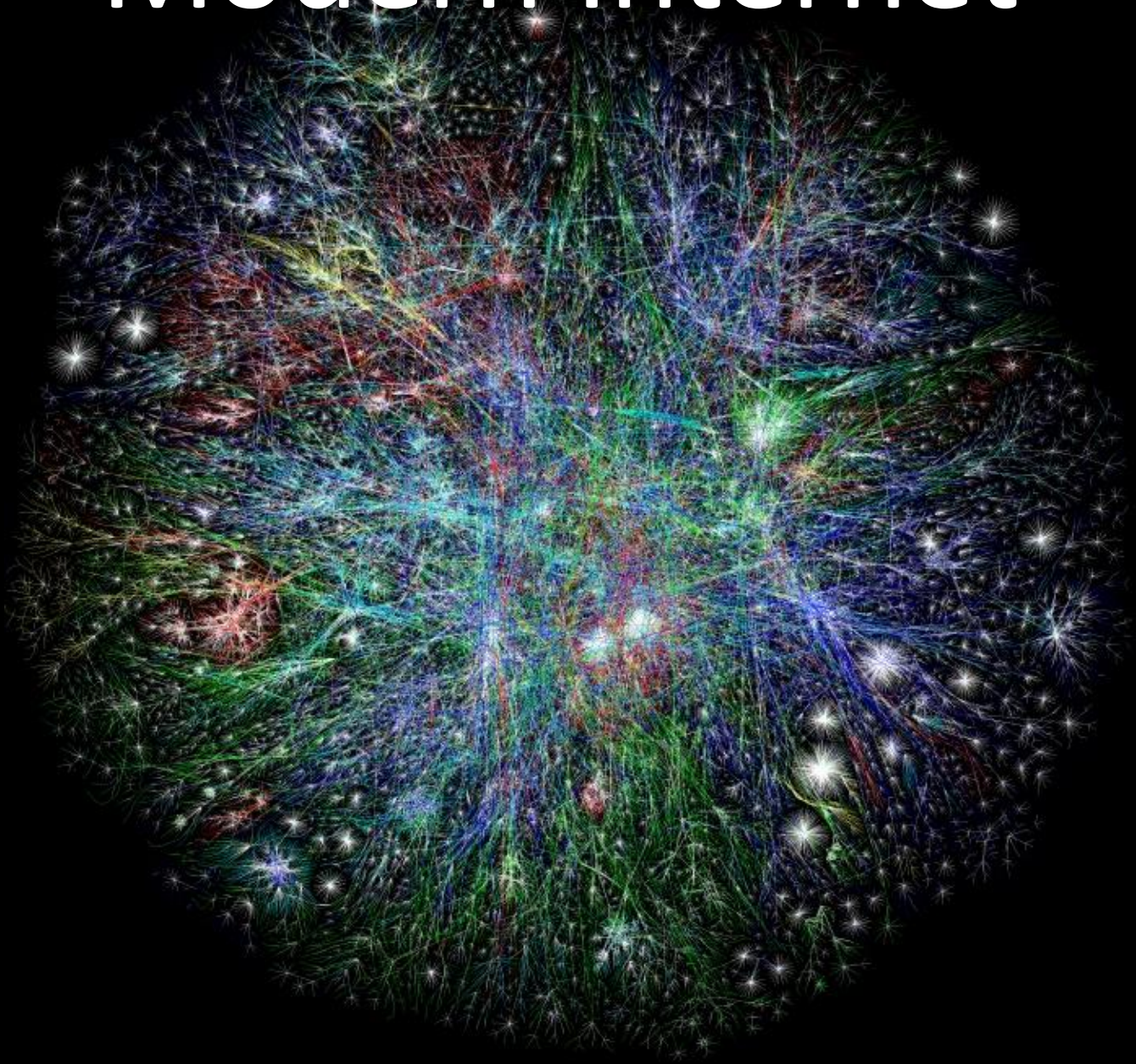
The Internet 40 Years ago: single line 400 miles long, first transmission was “login”, crashed after “lo”.

Arpanet 1971

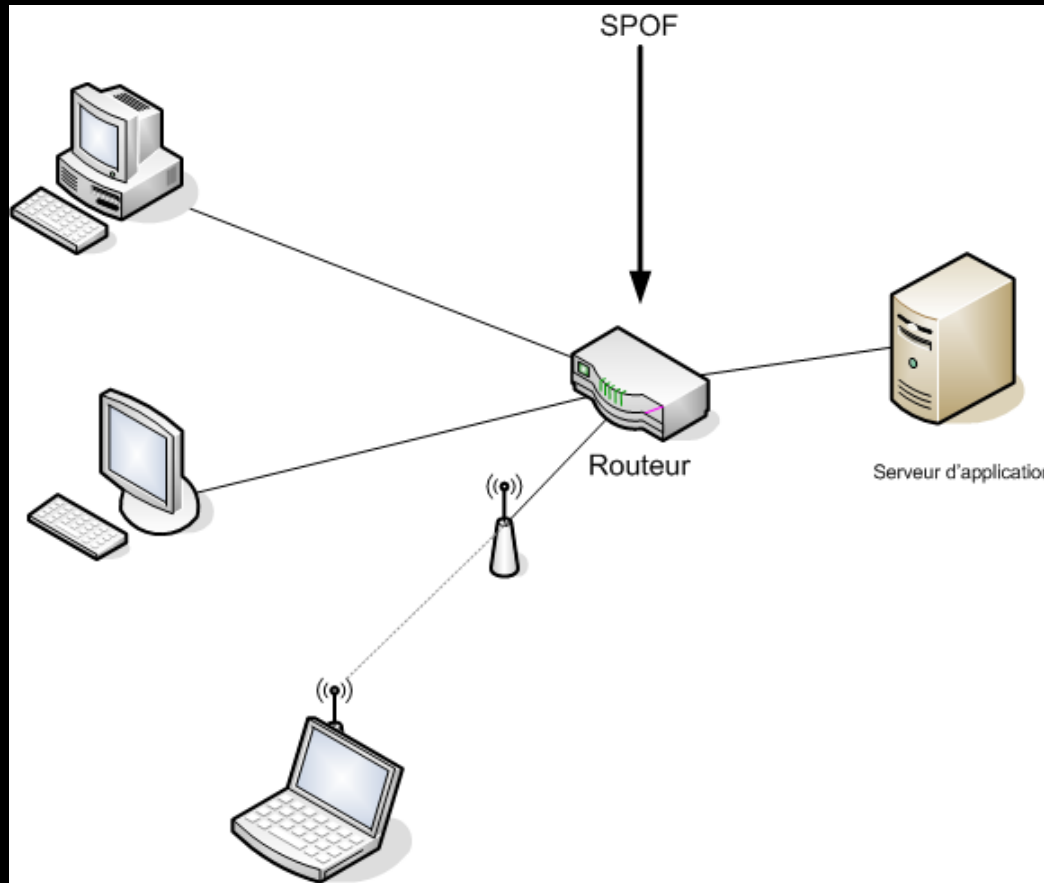


MAP 4 September 1971

Modern Internet



The Router



Allows computers to communicate by receiving data from one (as a “packet”) and forwarding it to the next router along the way to the address in the packet.

- Before Routers, one Computer would call another directly over the phone, where another computer would answer and provide a host, usually a Bulletin Board System (BBS).
- Can you find the Router in this room?

Trace Route

1. Open a Command Prompt (Start > All Programs > Accessories > Command Prompt)
2. Run the following command: **tracert**
<http://www.fbi.gov>
3. Run the following command: **ping**
<http://www.fbi.gov>
4. Navigate in browser to:
<http://www.yougetsignal.com/tools/visual-tracert/>
5. Map the IP address from the ping command.

The Internet: Software Architecture

- REST (Representational State Transfer) architecture: anarchic, anything goes
- Uniform Resource Locator (URL)
- Multipurpose Internet Mail Extensions (MIME)/Internet Media Type: applications, audio, video, 3D models, images, text
- Hypertext

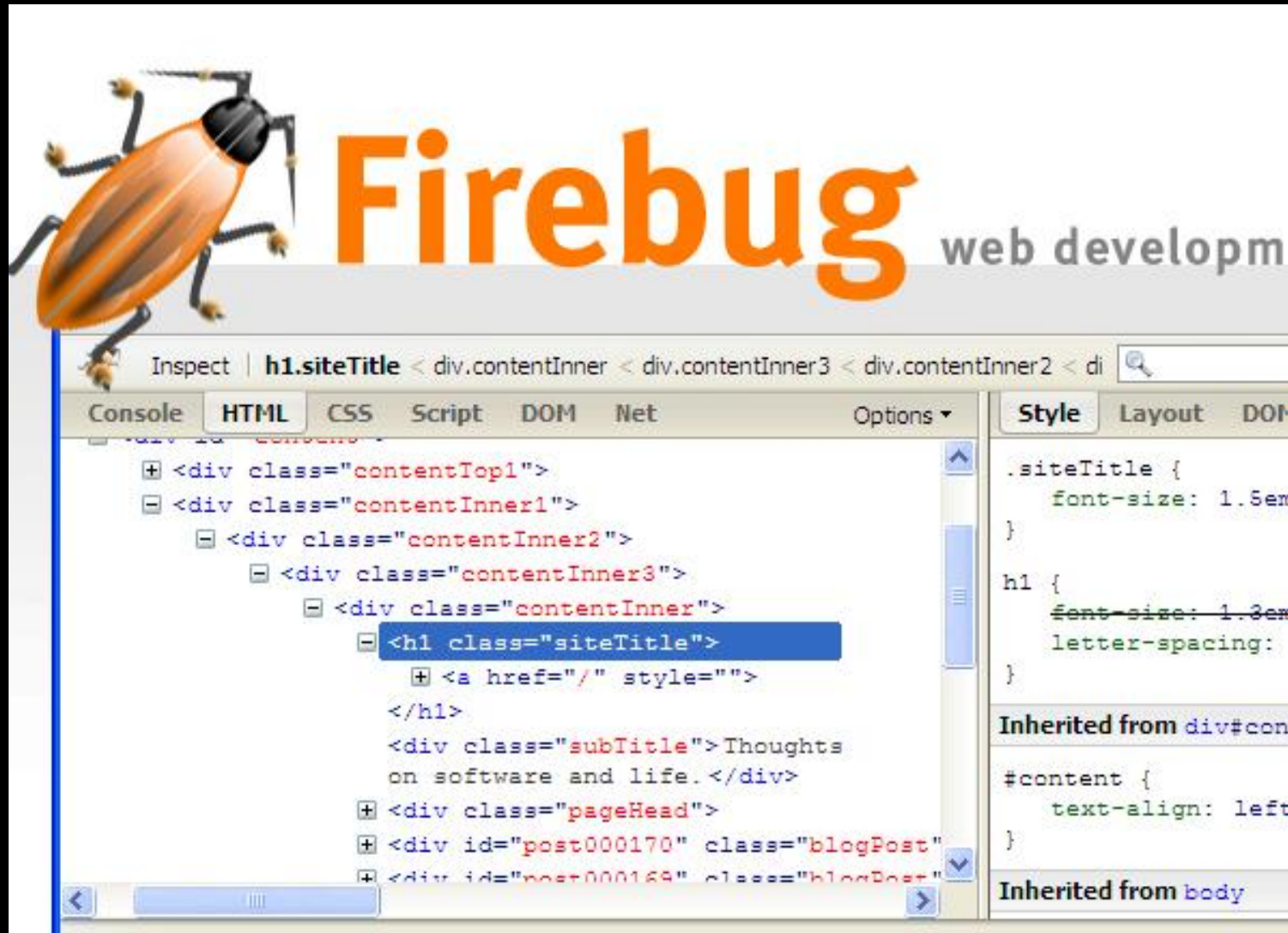
Navigate the DOM

Mozilla Firefox

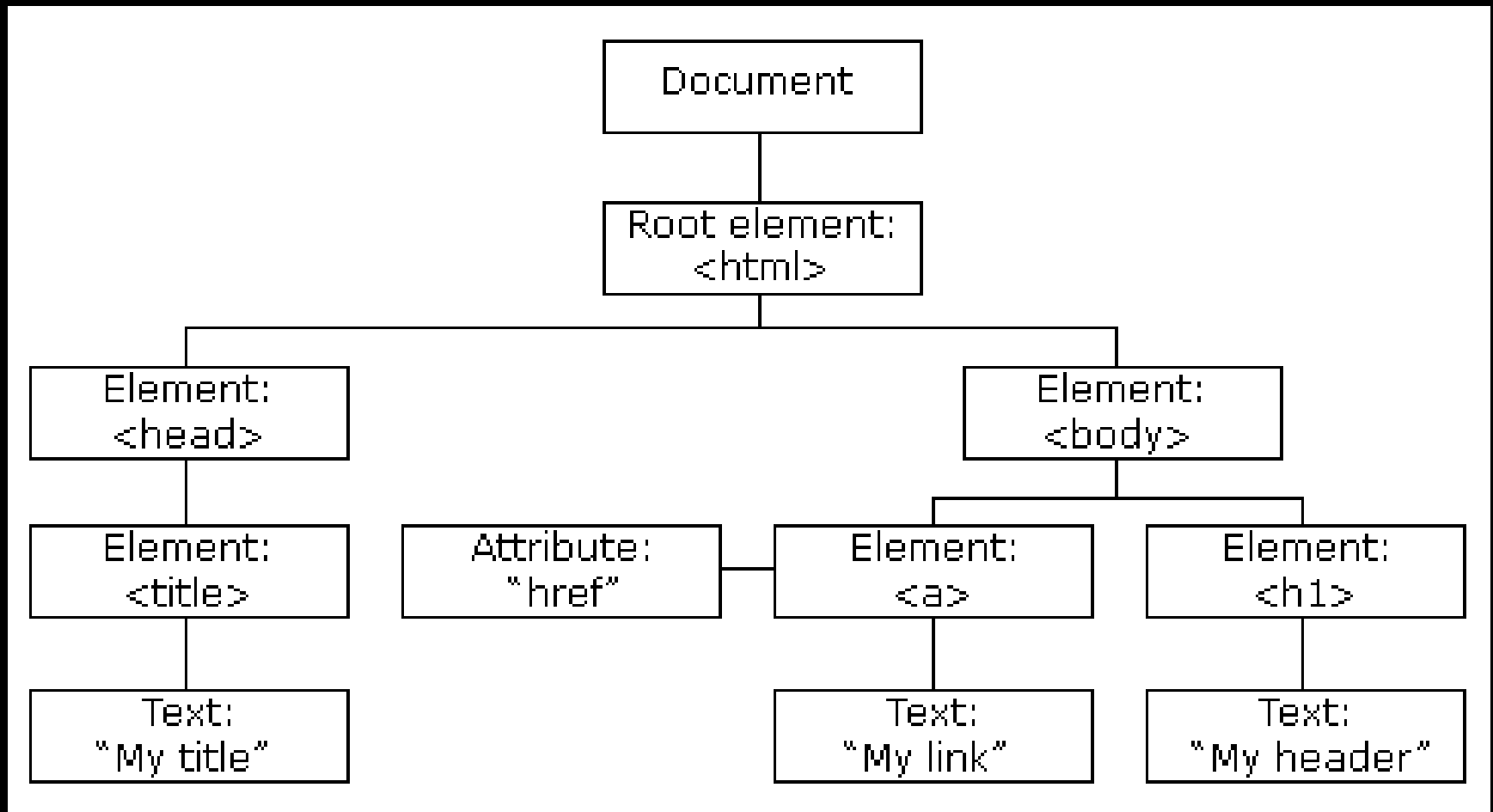


<http://www.mozilla.org/>

Firebug: Firefox Add-On



Document Object Model (DOM)



View Page Source

DOM Navigation: waygate.com

The screenshot shows a Mozilla Firefox browser window displaying the website <http://waygate.com/>. The page content includes the Waygate logo, the text "Maintained by ideonex", and three columns of links: News, Organizations, and Blogs. The DOM Inspector is open at the bottom, showing the HTML structure of the page. The selected element is the `<body>` tag, which contains the following HTML code:

```
<html>
<head>
<body text="#ffffff" link="#ffffff" bgcolor="#000000" alink="#ffffff" vlink="#ffff">
  <center>
    <p>
      Maintained by
      <a href="http://ideonex.com">
        <b>ideonex</b>
      </a>
      <br/>
      <a href="http://www.waygate.com">
        
      </a>
    </p>
  </center>
</body>
</html>
```

The DOM Inspector also shows the style rules for the selected element, which are defined in `waygate_style.css (line 37)`:

```
body
{
  background-color: #000000;
  font-family: "ARIAL"
}
```

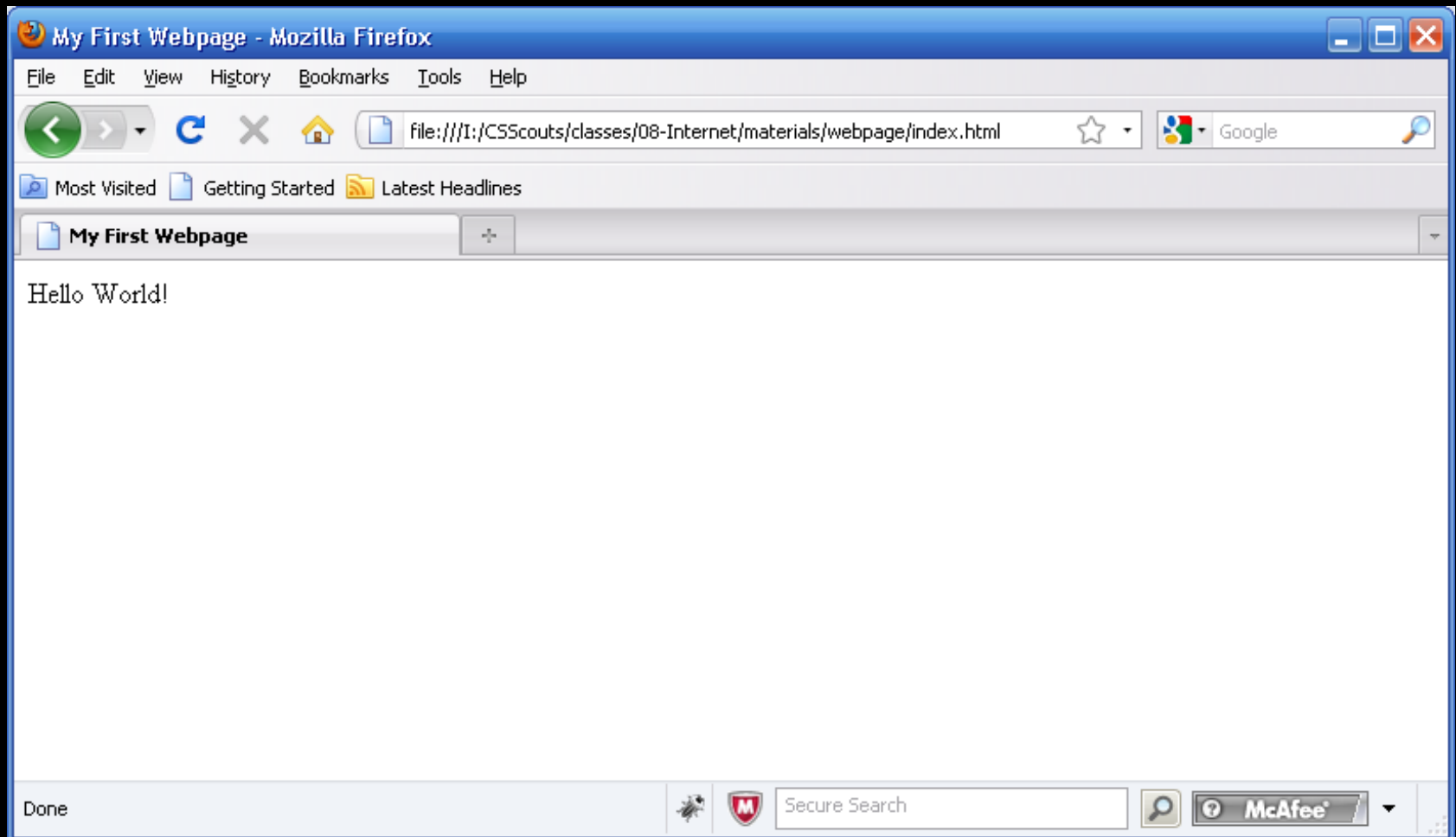
Build a Webpage

1. Create a new text document. Rename it “index.html”
2. Right-click on it “Open With > Notepad”
3. Enter the following and save:

```
<html>
  <head>
    <title>My First Webpage</title>
  </head>
  <body>
    Hello World!
  </body>
</html>
```

Build a Webpage

Drag and drop into web browser.



Build a Webpage: BODY

- In “index.html” modify “<body>” to “<body bgcolor=“#FF0000”>”, save and refresh the page.
- Try #00FF00
- Try #0000FF
- Try mixing and matching RGB hexadecimal values.

Build a Webpage: FONTS

- Modify “Hello World!” to “Hello World!”, save and refresh the browser.
- Modify “Hello World!” to “<h1><i>Hello World!</i></h1>”, save and refresh the browser.
- Put “<div align=“center”>” on the line below the “<body” tag, and “</div>” on a new line above the “</body>” tag, save and refresh the browser.

Build a Webpage: IMG

- Save an image to the same directory as index.html, add “” below the “<h1><i>Hello World!</i></h1>” where ### is the name of the saved image file. Save and refresh the browser.
- Modify “” to “”, save and refresh the page.

Build a Webpage: HREF

- Add “My Second Webpage” to your webpage, save and refresh.
- Click the link.
- Click “Back”.
- Copy “index.html” file and paste into same directory, rename the file from “Copy of index.html” to “index2.html”

Build a Webpage: HREF (Cont)

- Click the link.
- Replace the “Hello World!” with “My Second Webpage”.
- Modify “Link to Index2.html” to “Hello World!”
- Click the link in your browser.

HTML Reference

<http://w3schools.com/>