
Computer Science

- What is Computer Science?
- What areas can we identify in computer science?
- Is a programmer a computer scientist?
- How can you become a computer science major?

Favicon

- Icon that appears next to the websites' URL in the address bar.
- Example: <http://www.umd.edu/>
- You also see them when you bookmark a page.
- The icon is represented by a file named favicon.ico
- In the resources section of the class web page you can find a link to a favicon generator.
- To place the favicon in your page insert the following html tag in the head section of your html file

```
<link rel="shortcut icon" href="favicon.ico" />
```
- **Example:** FaviconExample.html
- **Link:**
<http://www.cs.umd.edu/~nelson/WebExamples/FaviconExample/FaviconExample.html>

Round Corners

- You can achieve round corners by using `` and setting the background of a div area.
- You can generate the corners using a image editing software (e.g., Photoshop) or by using some online generators (see Resources section for some links)
- **Example:** [RoundedCorners/roundCorners.html](#)
- Currently Mozilla-based browsers support a property for generating rounded corners. This will be part of CSS3.
- **Example:** [MozillaRoundedCorners/MozillaRoundedCorners.html](#)

Multimedia

- Several video file formats. For example:
 - Macromedia Flash
 - MPEG (MPEG-4)
 - QuickTime
 - Windows Media
 - Others
- Each has its advantages and disadvantages
- Two main approaches to access video, audio, animation:
 - **File Downloading** (HTTP streaming/HTTP delivery)
 - **Streaming**

Multimedia

■ File Downloading

- Entire file must be downloaded to your computer before starting to viewing the media (video, audio, animation, etc.). You have to wait before viewing the media.
- This approach is relatively easy and cheap to implement via either:
 - hyperlink to the file. When the user selects the link the appropriate player will start processing the media file
 - Embedding – media appears in a portion of the web page rather than in a separate application.

■ Streaming

- File is sent in a stream and user can start viewing the media almost immediately.
- Streaming allows for broadcasting of live events (webcasting).
- Streaming services can be expensive.
- **Example:**
- http://webclust1.liquidcompass.cc/sos4cust/WTOP/audio_player.php?id=WTOP

■ Progressing Downloading

- File is downloaded but the user can start viewing the media once a portion of the file has been downloaded

Multimedia

- Due to its cost and simplicity file downloading (HTTP Streaming Video) is the option you may frequently use.
- To deploy HTTP Streaming video:
 - Create a media file.
 - Upload the file to the web server.
 - Make a hyperlink or embed the media in your page.
- In order to embed media we use the html object tag. Each media file (e.g., quicktime, mpeg, etc.) follows a particular configuration illustrated in the following examples.
- Important: In firefox you must make sure you have the appropriate plugin (<https://addons.mozilla.org/en-US/firefox/browse/type:7>)
- For our examples, we needed to install the windows media plugin
- **Example:** EmbeddingAVI.html
- **Example:** EmbeddingWMV.html
- **Example:** EmbeddingQuicktimeV1(V2).html
- **Example:** EmbeddingFlash.html

Placing Your Videos on the Web

- Transfer the video your computer.
 - Video software mentioned below can help you in this process (“Capturing Video”).
- Edit video if necessary. Example of video editing software:
 - PowerDirector
 - ShowBiz DVD
 - Ulead VideoStudio
 - Nero Ultra Edition
- Export video in a web-compatible format like Quicktime, Windows Media, etc.
- Place the video in your web site.
- Uploading videos to youtube
 - <http://computershopper.com/howto/upload-your-videos-to-youtube>

Generation of Random Values

- Example: RandomValues.html

Events

- **Event** – Notification that something has occurred.
- Example of situations that make the web browser generate an event.
 - Browser finishes loading a document.
 - When the user clicks on a button.
 - When the user moves the mouse.
 - Others.
- **Event handler** (also known as event listener)
 - JavaScript function or code fragment that is executed when a particular event occurs.
- **Event handler registration**
 - Associating an event handler with a particular event.
- **Example:** EventEx.html

Event-driven Programming

- **Normal (control flow-based) programming**
 - Approach
 - Start at main().
 - Continue until end of program or exit().
- **Event-driven programming**
 - Start at main().
 - Register event handlers.
 - Await events & perform associated computation.
- **GUIs (Graphical User Interfaces)**
 - Example of event-driven software.

Event Handler Attributes for most HTML

■ Mouse Related

- ❑ **onclick** – mouse button is pressed and released.
- ❑ **ondblclick** – mouse button is double-click over element.
- ❑ **onmouseover** – mouse moves over element.
- ❑ **onmouseout** – mouse moves off element.
- ❑ **onmousemove** – mouse pointer is moved.
- ❑ **onmousedown** – mouse is pressed down while cursor is over the element.
- ❑ **onmouseup** – mouse is released while the cursor is over the element.

■ Keyboard Related

- ❑ **onkeypress** – key pressed and release.
- ❑ **onkeydown** – key is pressed.
- ❑ **onkeyup** – key is released.

■ Other

- ❑ Keep in mind that there additional handlers that are specific to certain tags. We will address those later on.