CMPSCI 120
Fall 2016
Midterm Exam #2
Solution Key
Wednesday, November 16, 2016
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<1>   20 Points – Quick Answers.   Do any 10 for full credit (2 points each); do more for extra credit (1 point each for any correct answers over 10). Blank or incorrect answers will be ignored.

01100010000001	In IPv4 classful addressing, show the **<u>network ID</u>** (in binary) for the address: **10011000.10000001.10100010.11001001**
Yes	Is the IP address **192.168.1.100** a legal IPv4 address?
.GIF	I have a 16-color **.BMP** file of a cartoon scene. To put it on the Web, should I first convert it into a **.JPG** or a **.GIF** file?
.GIF	Which graphics file format(s) (**.BMP**, **.JPG**, **.GIF**, **.PNG**, **.SVG**) support both transparency and animation?
.SVG	Which graphics file format(s) contain descriptions of objects rather than arrays of pixels?
FTP	I showed in class a program for designing and ordering printed circuit boards. What Internet tool (telnet, ftp) is embedded in this program?
False	True or False: PuTTY and ssh are encrypted versions of ftp. (They are encrypted versions of <u>telnet</u>, not ftp.)
True	True or False: I can log into my UNIX account from both a Windows machine and a Mac at the same time.
False	True or False: If I change my UNIX password in PuTTY/ssh, I also have to change it in WinSCP/Fugu. (It's the same password because it's the same account!)
chmod u+w Frog.gif	In UNIX, what is the command I would type to change the permissions on **Frog.gif** to add write permission for the user?
chmod 664 Frog.gif	In UNIX, what is the command I would type to set the permissions on **Frog.gif** to **rw-rw-r--**, regardless of what they were before?
emacs index.html	I want to edit the **index.html** file in the current UNIX folder. What is the command I would type?

cd ..	I am currently in **public_html/cmpsci120**. What command closes **cmpsci120** and makes **public_html** the current folder?
rwxr-xr-x	The permissions on **public_html** are **rwxr-x---**. What should they be for people to view my Web page?
Toads%20and%20Frogs.html	How would I specify the file name **Toads and Frogs.html** to make it part of a legal URL? Blanks are replaced by **%20** codes.
NO	Does it matter to the completion of your assignments if the **elsrv3** server was moved from the COMPSCI building to Whitmore?
<DEL>…</DEL>	What should I use instead of the **<S>…</S>** tag? **<S>…</S>** and **<STRIKE>…</STRIKE>** are deprecated.
index.html	If I do not specify the name of a resource in a URL, what file is fetched as a default?
¹⁄₂A² *or* **½A²**	How would I typeset the equation $\frac{1}{2}A^2$ in HTML?
Because 31 OCT is the same as 25 DEC!	Why can't computer programmers tell the difference between Halloween and Christmas? 31 base 8 = 25 base 10

<2>   10 Points – I have an HTML color defined as **#778899**.

A.   What is one of its color names?   **LightSlateGray** or **LightSlateGrey**

B.   What is the short hex version of this color?   **#789**

C.   What is the closest browser safe color to this color? **#669999** or **#699**

D.   What is the decimal value of the red component?   **119** (half-credit for 102)

E.   What would I replace the red component with to make red as bright as possible?   **FF**

<3>   5 Points – Short Answer – In UNIX I type **emacs index.html** at the command line, but instead of my existing file I get a blank screen. What is the most likely cause of this error?

        This is generally because I am in the <u>wrong folder</u>, not in the folder where the **index.html** file currently resides. (Also, could be the file had the wrong name.)

<4>   5 Points – Short Answer – In answering my email from students, I've encountered a lot of statements such as "logging in to PuTTY" or "connect to my Fugu account" or "my WinSCP password won't work". What is the fundamental error being exhibited by all of these statements?

        The error is in thinking that the username or password has anything to do with the actual program being used to access the UNIX account. The <u>username and password belong to the account</u>, not to PuTTY or ssh or WinSCP or Fugu.

<5>   10 Points – Mark each of the following as either <u>legal</u> or <u>illegal</u> ways of setting a Web page background color to fuchsia in the **<STYLE>**...**</STYLE>** section.

        A.   **body {bgcolor="fuchsia"}**   **Illegal**

        B.   **body {background-color="fuchsia"}**   **Illegal**

        C.   **body {background-color:fuchsia}**   **Legal**

        D.   **body {background-color:#F0F}**   **Legal**

        E.   **body {color:#FF00FF}**   **Illegal**

<6>   20 Points – For all the questions on this page consider the following JavaScript fragment. The fragment is located somewhere between **\<BODY\>** and **\</BODY\>**.

```
<SCRIPT TYPE="text/javascript">
    <!--
        I = 0 ;
        N = 1 ;
        while (I < 3)
            {
            document.writeln ("2<SUP>", I, "</SUP> = ", N, "<BR>") ;
            I = I + 1 ;
            N = N * 2 ;
            }
    //-->
</SCRIPT>
```

A.   (10 points) What HTML code is <u>written out</u> into the current document when the JavaScript fragment runs? Hint: exactly three lines are written out.

Line #1:   **2\<SUP\>0\</SUP\> = 1\<BR\>**

Line #2:   **2\<SUP\>1\</SUP\> = 2\<BR\>**

Line #3:   **2\<SUP\>2\</SUP\> = 4\<BR\>**

B.   (10 points) What <u>appears on screen</u> when the result of part A is rendered by the browser? Hint: exactly three lines appear on screen.
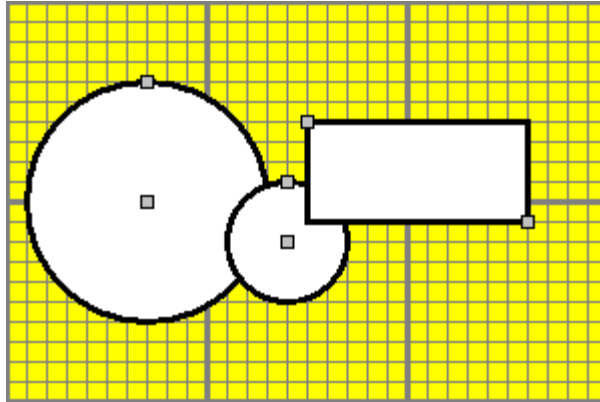

Line #1: $2^0 = 1$

Line #2: $2^1 = 2$

Line #3: $2^2 = 4$

<7>   10 Points – A form called **MyForm** contains an input text box called **MyAnswer**. The JavaScript function below computes $X = N^2$ from parameter **N**. Complete the function to <u>put the resulting value of **X** into the text box in the form</u>.

```
function Compute (N) {
    X = N * N ;

    document.MyForm.MyAnswer.value = String(X) ;

}
```

<8>   20 Points – The following image shows a 300~~320~~×200 pixel graphics containing three objects: two circles and a rectangle. Complete the HTML code below to turn the image, called **Animals.gif**, into a client side image map, where the big circle links to **www.frog.com**, the small circle links to **www.toad.com**, the rectangle links to **www.newt.com**, and the background links to **www.zoo.org**. In the image the gray grid is at a 10-pixel spacing (normally not shown), and all points of interest are shown as small square dots (also normally not shown). All points are on 10-pixel boundaries (i.e., a point might be at coordinates <30,20> but not at <32,18>, for example). Be careful of the order of the regions!


```
<IMG SRC="Animals.gif" USEMAP="#MyMap">

<MAP NAME="MyMap">

    <AREA SHAPE="rect"    COORDS="150,60,260,110"
                          HREF="http://www.newt.com/">

    <AREA SHAPE="circle" COORDS="140,120,30"
                          HREF="http://www.toad.com/">

    <AREA SHAPE="circle" COORDS="70,100,60"
                          HREF="http://www.frog.com/">

    <AREA SHAPE="default" HREF="http://www.zoo.org/">

</MAP>
```

Rectangle has to be first, circles have to be in the given order (small one before big one), and default has to be last.