

SPRING 2007
CSC 120.02 Introduction to Computer Science
Assignment 3
Due: February 15, 2007
**Networking, The World Wide Web, Number Systems
and Data Representation**
(20 points)

Exercise 1. Using Notepad and the basic HTML formatting described in Section 16.2 of your textbook, create a small Web page devoted to your favorite personality from Ancient Egypt (8 points)

Step 1.1. There are many sites on the World Wide Web devoted to Ancient Egypt, such as

<http://www.touregypt.net/ancientegypt/>

<http://www.charlesmiller.co.uk/fla/index.htm>

<http://www.narmer.pl/indexen.htm>









<http://xoomer.alice.it/francescoraf/index.htm>

<http://www.nemo.nu/ibisportal/0egyptintro/index.htm>

Find information on someone from Ancient Egypt sufficient to put together this person's short biography (one or two paragraphs) with an inline image.




Step 1.2. Create an HTML file with this information and open it in a web browser, such as the Internet Explorer. Capture a screenshot and paste it on a new page in a word processor, after the cover page for this assignment. **8 points** will be awarded for having the screenshot of your HTML file opened in a web browser as part of your printout.

Exercise 2 (2 points). Suppose the following Huffman encoding is used to represent several Egyptian hieroglyphs:

Huffman Code	Egyptian hieroglyph
00	
01	
100	
110	
111	
1010	
10110	
10111	

Encode the following two names in binary:

2.1.     (1 point)

2.2.    (1 point)

Exercise 3 (1 point). Convert 640_8 from octal to decimal.

Exercise 4 (1 point). Convert 1101111_2 from Base 2 to octal.

Exercise 5 (1 point). Convert 216_{16} from Base 16 to binary.

Exercise 6 (1 point). Convert 10110001010_2 from binary to hexadecimal.

Exercise 7 (1 point). Convert 415_{10} from Base 10 to hexadecimal.

Exercise 8 (1 point). Convert 100101_2 from Base 2 to Base 10.

Exercise 9 (2 points). In the example below, the computation of a sum $(-108)+19 = -89$ is described in terms of the Two's Complement binary data representation on the right-hand side, where $k=8$ is the number of bits used:

$$\begin{array}{r} -108 \quad 10010100 \\ + \quad 19 \quad + \quad 00010011 \\ \hline -89 \quad 10100111 \end{array}$$

Following the example, compute $(-86)+71$, fill in the answer in Base 10 on the left-hand side, and describe its computation in the 8-bit Two's Complement representation on the right-hand side:

$$\begin{array}{r} -86 \\ + \quad 71 \quad + \quad \underline{\hspace{2cm}} \end{array}$$

Include the typeset result in your printout. There is no need to reproduce the example there.

Exercise 10 (1 point). Write 0.00201995 in the scientific notation with an "E".

Exercise 11 (1 point). Convert 34.75_{10} from decimal to binary.