**In-Class Exercise 04**

Be sure to observe the rules of spelling, grammar, capitalization, and punctuation in your write-up. Complete sentences are not necessary for this assignment.

**Name:** Click here to enter text.

**3a. Partner’s Name (first and last):** Click here to enter text.

**3b. Your message. Only put your message here after you are done with Part I of this assignment.**

Click here to enter text.

**4. ASCII decimal numbers of your phrase.**

Click here to enter text.

**5 (1). Binary representation of your phrase. Don’t forget to include leading zeros!**

Click here to enter text.

**5 (2). Hexadecimal representation of your phrase.**

Click here to enter text.

**7. Partner’s hexadecimal code.**

Click here to enter text.

**8 (1). Partner’s ASCII decimal numbers.**

Click here to enter text.

**8 (2). Partner’s decoded message.**

Click here to enter text.

**10a. How many characters (including spaces and punctuation) are in your partner’s message?**

Click here to enter text.

**10b. How many bytes (NOT bits) does this message take up in memory?**

Click here to enter text.

**13.** **Screenshot of hex editor with LastnameFirstname\_ICE04\_UncompressedOriginal.bmp file uploaded.**



**16. Screenshot of hex editor with LastnameFirstname\_ICE04\_UncompressedBlank.bmp file uploaded.**



**17a. What pattern do you see in the hex editor in Step 16 (ignoring the first five or six lines)?**

Click here to enter text.

**17b. Why does this pattern exist?**

Click here to enter text.

**18. Why are the file sizes of LastnameFirstname\_ICE04\_UncompressedOriginal and LastnameFirstname\_ICE04\_UncompressedBlank equal? (HINT: Think in terms of the dimensions that determine bitmap file size.)**

Click here to enter text.

**19. Calculate the size of either bitmap file using its width and height and a 24-bit depth. Show your calculations, and be sure to use the correct units.**

Click here to enter text.

**20. Starting with your value from Step 19, express the size of your bitmap file in bits, bytes, KB, MB, and GB. Show your calculations for each one!**

Click here to enter text.

**21a. What value did you choose for the maximum number of colors?**

Click here to enter text.

**21b. What changes did you notice in your image when you converted to Indexed Color?**

Click here to enter text.

**21c. What is the minimum number of bits you need to represent this many colors? (HINT: This should be a single-digit value.)**

Click here to enter text.

**21d. In the previous question, how do you know what the minimum number of bits is? Show or describe your calculations.**

Click here to enter text.