

In-Class Exercise 07 – Audio File Size and Download Calculations

Topics: Download calculations

Summary:

Download time is a critically important aspect of today's audio and video media consumption, the reasons for which we discussed in class. This assignment builds on the calculations we're studying as part of the audio unit.

Reminders:

- Please use headphones for this assignment. If you do not have headphones, please see the instructor.
- Please call on the instructor if you need help. You are also welcome and encouraged to confer with your classmates if the instructor is busy helping somebody else.
- You are welcome to take breaks at your discretion while working on this assignment. However, you are not allowed to leave for the day until the class period has ended or you have completed the assignment and turned it in.

Please read each step carefully before completing it. Be sure to follow the rules of proper spelling, grammar, capitalization, and punctuation in your write-up.

Instructions:

1. Open up the Word template and save it as **LastnameFirstname_ICE07**.
 2. Obtain a copy of the files you submitted for In-Class Exercise 06 (the Audacity exercise). If you don't have a local copy already, you can download your submitted files from D2L.
 3. In your Word file, list the size of your file **LastnameFirstname_ICE06_Enhanced.wav**. You may use your choice of MB, KB, or bytes.
 4. Your .wav file in the previous step is a 44100 Hz (44.1 kHz), 16-bit, stereo file. Calculate the file size. Show your calculations, and ensure it is **close** to the file size you recorded in the previous step (it does not need to be identical). For an accurate comparison, be sure your file size units are the same as those in the previous step.
 5. In your Word file, list the size of your file **LastnameFirstname_ICE06_8_8000.wav**. You may use your choice of MB, KB, or bytes.
 6. Manually calculate the size of your file from the previous step. Show your calculations, and ensure it is close to the file size you recorded in the previous step. For an accurate comparison, be sure your file size units are the same as those in the previous step.
 7. Use one of several online tools to determine your current network speed. Some quality tools include
 - a. Speedtest.net - <http://www.speedtest.net/>
 - b. Bandwidth Meter Online Speed Test - <http://reviews.cnet.com/internet-speed-test/>
 - c. Speakeasy Speed Test - <http://www.speakeasy.net/speedtest/> (choose Atlanta, GA)
- Run the tool of your choice. After it has finished, take a screenshot of the results and put it into your Word file.
8. In your Word file, record your **download** speed (I don't want upload speed). Pay attention to the units you use (bps, kbps, or mbps), since this will be important later
 9. Calculate the following, showing your calculations for each one:
 - a. How long would it take to download your **LastnameFirstname_ICE06_Enhanced.wav** file on your current network?

- b. How long would it take to download your **LastnameFirstname_ICE06_8_8000.wav** file on your current network?
- c. How long would it take to download your **LastnameFirstname_ICE06_Enhanced.wav** file on a dial-up network of 56 kbps?
- d. How long would it take to download your **LastnameFirstname_ICE06_8_8000.wav** file on a dial-up network of 56 kbps?

10. Calculate the following, showing your calculations for each one:

- a. What is the bit rate of your **LastnameFirstname_ICE06_Enhanced.wav** file?
- b. What is the bit rate of your **LastnameFirstname_ICE06_8000.wav** file?

11. Answer the following questions. (**HINT:** Use your answers from questions 8 and 10 to help answer this question.)

- a. Could you stream your **LastnameFirstname_ICE06_Enhanced.wav** file on your current network? Why or why not?
- b. Could you stream your **LastnameFirstname_ICE06_8_8000.wav** file on your current network? Why or why not?
- c. Could you stream your **LastnameFirstname_ICE06_Enhanced.wav** file on a dial-up network of 56 kbps? Why or why not?
- d. Could you stream your **LastnameFirstname_ICE06_8_8000.wav** file on a dial-up network of 56 kbps? Why or why not?

12. Answer the following questions.

- a. What is the maximum frequency you can record in your **LastnameFirstname_ICE06_Enhanced.wav** file? Explain how you know.
- b. What is the maximum frequency you can record in your **LastnameFirstname_ICE06_8_8000.wav** file? Explain how you know.

13. Save your file again and submit it on D2L.

Criteria:

Step	Points	Reason
3	5	List the size of your file LastnameFirstname_ICE06_Enhanced.wav.
4	6	Calculate file size, and show calculations
5	5	List the size of your file LastnameFirstname_ICE06_8_8000.wav.
6	6	Calculate file size, and show calculations
7,8	6	Screenshot and download speed
9a	6	How long would it take to download your LastnameFirstname_ICE06_Enhanced.wav file on your current network? Show calculations.
9b	6	How long would it take to download your LastnameFirstname_ICE06_8_8000.wav file on your current network? Show calculations.
9c	6	How long would it take to download your LastnameFirstname_ICE06_Enhanced.wav file on a dial-up network of 56 kbps? Show calculations.
9d	6	How long would it take to download your LastnameFirstname_ICE06_8_8000.wav file on a dial-up network of 56 kbps? Show calculations.
10a	6	Calculate bit rate of LastnameFirstname_ICE06_Enhanced.wav and show calculations.
10b	6	Calculate bit rate of LastnameFirstname_ICE06_8000.wav and show calculations.
11a	6	Could you stream your LastnameFirstname_ICE06_Enhanced.wav file on your current network? Why or why not?
11b	6	Could you stream your LastnameFirstname_ICE06_8_8000.wav file on your current network? Why or why not?
11c	6	Could you stream your LastnameFirstname_ICE06_Enhanced.wav file on a dial-up network of 56 kbps? Why or why not?
11d	6	Could you stream your LastnameFirstname_ICE06_8_8000.wav file on a dial-up network of 56 kbps? Why or why not?
12a	6	What is the maximum frequency you can record in your LastnameFirstname_ICE06_Enhanced.wav file? Explain how you know.
12b	6	What is the maximum frequency you can record in your LastnameFirstname_ICE06_8_8000.wav file? Explain how you know.