CLEMSON
School of COMPUTING

Introduction

The goal of this lab is to introduce/practice Floating Point conversion. We will also cover this concept in class this week along with working examples.

Due:

Monday, March 29, 2021, midnight.

Lab Instructions

While I know this would be much easier to do by hand. I have found grading to be easier when your answers are typed. Therefore**, must** type your answer in RED on this document and submit the document through canvas as a **PDF**. Please read the entire document. Points will be deducted if you do not follow directions.

Part 1:
Watch the following videos pertaining to Floating Point conversion from decimal to binary and binary to decimal.

https://www.youtube.com/watch?v=tx-M_rqhuUA
https://www.youtube.com/watch?v=4DfXdJdaNYs

Part 2:

Following the instructions in the above video. Convert the following floating-point number to binary.

64.48

Show your work. Also, explain what you are doing each step of the way. Your explanation does not have to be a long explanation. Only enough to let your TA know you understand what you are doing. If you do not show and explain your work, you will receive a 0 for the question.

Now convert the binary back to decimal, showing and explaining each step of the process. Again, your explanation does not have to be a long explanation. Only enough to let your TA

know you understand what you are doing. If you do not show and explain your work, you will receive a 0 for the question.

Part 3:

Following the instructions in the above video. Convert the following floating-point numbers to binary.

-195.56

Show your work. Also, explain what you are doing each step of the way. Your explanation does not have to be a long explanation. Only enough to let your TA know you understand what you are doing. If you do not show and explain your work, you will receive a 0 for the question.

Now convert the binary back to decimal, showing and explaining each step of the process. Again, your explanation does not have to be a long explanation. Only enough to let your TA know you understand what you are doing. If you do not show and explain your work, you will receive a 0 for the question.

The following link is a nifty tool you can use to check your work. You should understand that sometime online tools like this one will round which could change the last one or two bits on the tool. So, if your answer has a different bit on the end that is perfectly fine. I am not saying this will be the case only letting you know this could happen.

https://evanw.github.io/float-toy/

Submission:

You should submit your document to Canvas. Please make sure your answers are in RED. If you do not, a substantial number of points will be deducted.