Ps 2 Problem 1

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Abstract

This document has an outline of a program that converts a number into its 32 bit representation for a specific number 100.98763. i then calculated the difference between the bit representation and

1 Introduction

There is an information loss possible when storing data because of how computers store numbers. Let's calculate one

2 Methods

I directly took the code from blanton's jupyter note book on the intro section of his notes. the code uses built in numpy functions to turn into bits, his code mainly organizes it into obvious secitons. I then used a calculator to turn my 32 bit representation back into a decimal number.

3 Results

The difference between the ieee representation and the actual number is $2.75146484375 \times 10^{-6}$

4 Discussion

The difference is really small but it is there. I also calculated the difference by just subtracting the difference between the 32 bit representation and whatever python automatically saves as and found that to be 2.7514648479609605 x 10^{-6} which is really close but with possibly more accuracy or more errors.