Kurus 3

Use the accompanyingArduino library Myfloat_red

Let "double a=1.001;"

1. Choose randomly an array "double da[100]" of doubles uniformly distributed in [-5,5] (random();)
2. Convert "da" into an array "myfloat_type mda[100]" (arduino lib in "myfloat_red.ino" under course material)
3. Compute the mean relative error between da and mda
4. Compute da2=da^2
5. Compute mda2=mda^2
6. Compute the mean relative error between da2 and mda2
7. Iterate "a*=da[i];" over the length of da and measure the execution time (micros())
8. convert "a" into "myfloat_type f1;"
9. Iterate "mult_float(&f1,&mda[i],&f); memcpy(&f1,&f,2);" over the length of mda and measure the execution time
10. Compute the relative difference between results from (7) and (9)
11. Implement the fastest version of the trigonometric function "sine" that has below 2% relative error.

Vi har lavet til og med 6.

Det vi ser i opgaven er, at ved stører værdier, stiger den relative fejl. Tilmed ser vi også at ulige værdier har stører fejl. Dette giver mening, da man for at lave en float, dividere med 2, og tal der ikke går op i 2, ja de smider en rest væk.