Machine Precision Assignment

The Main Question for Math 4610 at USU

For this assignment, you will need to complete the following tasks.

- Write a code in Python that will return the machine precision on your computer.
- Write an alternative routine that tries to compute machine precision at $x = 0$. You should expect that this may not work. Put a check on the number of divisions by $\epsilon = 1/2$ so that the loop will not be an infinite loop.
- Write code in C that will find the precision of machine numbers near $x = 1$. Use the **float** data type in this part.
- Change your code in the previous task to apply to **double** precision numbers when using C.
- Summarize the previous work in this assignment. You should be able to write your summary in just a few sentences.

If you get stuck on the C part of the assignment in the last couple of tasks, there is a **float** data type version of code written in C. I will explain the code in class. The code is in the **/src** folder for Module 05.