

A Note on the History of Computing

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I have very eclectic reading interests—mathematics, history, politics, science fiction, history of science, the American Civil War—a good book on any of these subjects can lighten my wallet and add to the clutter on the bookshelves in my home or office. While reading one recent acquisition [1], I learned of an amusing story which I wish I had known while I was composing the essay that is §1.7 of the text. (And which will almost surely appear in any future editions.)

The earliest general purpose computer is widely considered to be ENIAC. In 1950, it was used to test the practicality of weather prediction by numerical modeling of atmospheric fluid flow. The test was artificial in nature, as it was done using 1949 data to see if the computation would have correctly predicted the weather as it was known to have turned out. (An important issue at this time was that running the program to predict the weather 24 hours in advance took longer than 24 hours—obviously not practical.) On page 228 of [1] the reader is informed that a version of the code run on ENIAC in 1950 has been converted into an app for a cell phone. The details—including pointers to some relevant publications—can be found at <http://mathsci.ucd.ie/~plynch/Publications/PHONIAc.html>. The authors originally converted the ENIAC code into a MATLAB m-file, which was then converted into a Java applet called PHONIAc. It is worth noting that the main loop of the MATLAB code ran to completion (on a Sony laptop) in about 30 ms, representing a gain in computing speed of about 3,000,000 to 1 over ENIAC. (A lot of this gain is in the elimination of the laborious use of punch-cards for intermediate output and input during the execution of the program.)

Lewis Fry Richardson was still alive at the time of the ENIAC computations, although very old, and one of the scientists involved in the project wrote to him of the success of the effort that Richardson had himself begun, so many years before.

References

- [1] Roulstone, Ian, and Norbury, John, *Invisible in the Storm: The Role of Mathematics in Understanding Weather*, Princeton University Press, Princeton, NJ, 2013