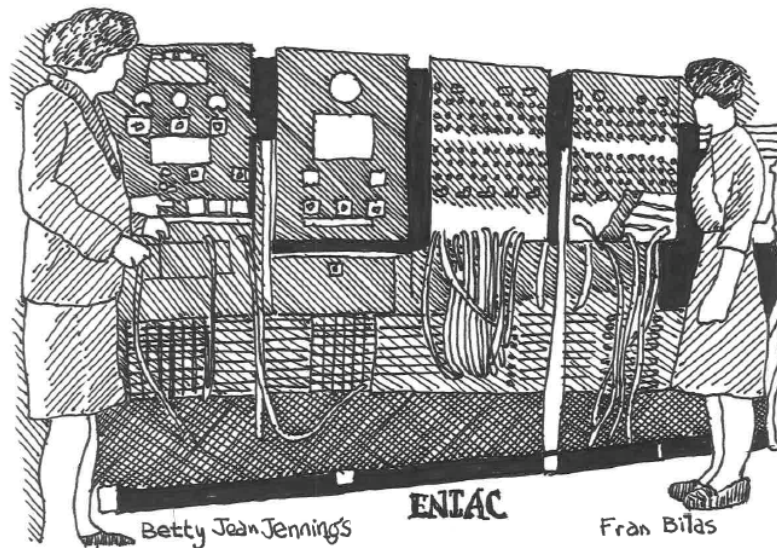


How did the Manhattan Project impact computing?

Prior to WWII, computers were people who performed computations. In the 18th Century, pencil and paper calculations provided the first accurate predictions of comet returns and eclipses. By the 1940s, there was a small selection of office equipment, adding machines, card sorters, and simple mechanical calculators available to aid human computers. Most computing was still the work of fingers and pencils.

Allied computers were engaged mostly in creating and improving huge tables. The armed forces needed ballistics tables, tide tables, and many sorts of mathematics tables of greater resolution. At Los Alamos, scientists and engineers needed better precision than they were getting from their slide rules, and called on gangs of mostly women to perform the tedious work.

Shortly after the war, the focus here turned from developing atomic weapons to improving them, and that required much more math. Lab mathematicians John von Neumann and Nicholas Metropolis went to the army to borrow time on ENIAC, a still under construction electronic computer being built to compute ballistics tables. Their team, which included several women who had been computers, wrote and ran the very first programs on ENIAC in support of LANL's nuclear weapons work. This proved to be a huge improvement over manual math.



The computer bug bit Los Alamos hard, and before long, Los Alamos was building its own electronic computers. We have been at it ever since, collaborating with several manufactures. We hosted the first Cray "supercomputer" serial number 001 for its six-month shakedown. (The Bradbury Science Museum features SN 004.) In the twenty-first century we have built Roadrunner, the first petaflop, that's a quadrillion floating point operations a second, computer, and it has already been ground up, literally, to make space for Cielo and Trinity.

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