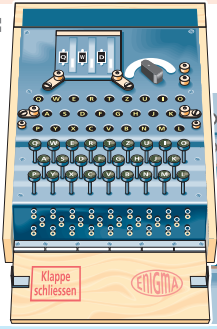
Birth of the computer

Driven by the war effort, Britain and America called upon some of the great minds of the century in the race to build the first modern computer

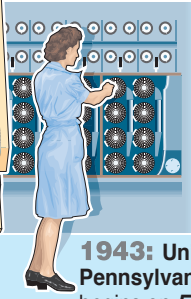
1930: Massachusetts Institute of Technology: ***Vannevar Bush*** builds the ***differential analyzer*** – a mechanical device used to predict complex behaviour of objects, such as aircraft moving under gravity – and ushers in start of modern computer age

1936: Cambridge University: ***Alan Turing*** writes his seminal paper ***"On Computable Numbers,"*** describing programmable machine which can perform logical operations. Turing's machine is the blueprint for the digital computer

1939-1945: Turing joins team of 12,000 at Bletchley Park, near London. Their task is to break the ***Enigma*** codes used by Hitler to communicate with his armies

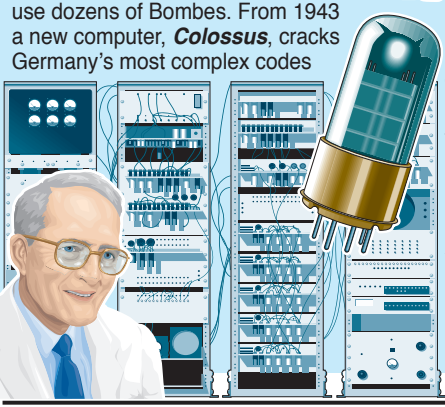


1940: Turing's team build computer using telephone switches as relays. This ***Bombe computer*** helps them crack Nazi codes

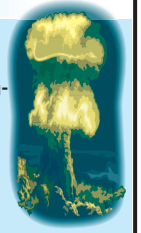


1941: Japan attacks Pearl Harbour killing 2,300 Americans and drawing the U.S. into the war. U.S. Army uses Bush's ***differential analyzer*** to help prepare artillery firing-tables

1941-1945: Operation ULTRA: British and American code-breakers use dozens of Bombes. From 1943 a new computer, ***Colossus***, cracks Germany's most complex codes



1943: University of Pennsylvania: Work begins on ***ENIAC,*** a high-speed computer using 19,000 vacuum tubes. **The 30-ton machine is used to help design the hydrogen bomb**



1948: Manchester University. British team headed by ***Max Newman*** builds ***Baby*** – world's first computer with random access memory (RAM). ***Tom Kilburn*** *(left)* writes first program to run on Baby, storing binary numbers and then referring back to them to perform calculations

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