SAURABH GUDWAL

CSE 1ST YEAR

CO18345

ASSIGNMENT

“HISTORY OF COMPUTERS”

Far from today’s computer technology, the first electric computers were very different. First generation computers could take up the space of an entire room, were expensive to run, and generated much heat, often the cause of their own malfunctions. The first computers only carried out mathematical equations. Only one calculation was solved at a time, using punch card and paper tape as input and printouts as output.         
        
In 1944 at Harvard University, Howard Aiken and [Grace Hopper](http://demarscomputerhistory.weebly.com/grace-hopper.html) started work on the MARK computer series in partnership with IBM. **Mark I**was controlled by pre-punched tape to calculate addition, subtraction, multiplication, and division using previously calculated results. It required about 4 seconds to perform a multiplication problem, and took up the space of a giant room. It as put to use with the war effort.  
  
Aiken was a huge influence on the growing of computer technology. He often spoke about how important they were and showed that it was possible to make a machine that could carry out a series of commands. At Harvard, he founded the world's first full pledged computer science program class. Computer science would have never grown to where it is today if it weren't for this giant leap forward that the Mark I provided.

## *Introduction to Vacuum Tubes*

The first generation of computer history is generally characterized by the widely used **vacuum tubes**. A vacuum tube worked similarly to a light bulb and was invented around the same time as a bulb. It made signals stronger; as an amplifier. They acted as switches as well by instigating and stopping the flow of electricity. They also served as magnetic drums for memory. However, these components took up very much space, making the computer very big.    
          
This electric current controlling device was first developed through research by Thomas Edison, Eugen Goldstein, Nikola Tesla, and Johann Wilhelm Hittorf. Edison patented his research and discoveries in 1884, but he didn’t quite understand the physics or importance. Later in early 20th century, John Ambrose Fleming used a diode tube to detect radio signals, which led to the development of the triode tube. These inventions started further advancement in telephony (technology in transmitters and receivers).

The Electrical Numerical Integrator and Calculator (**ENIAC I**) was developed in 1946 by John Mauchly and John Presper Eckert. Its use of vacuum tubes was more efficient than the mechanical switches of the Mark I. ENIAC was made initially for the American military, for they needed a computer to calculate settings used for weapons under different conditions, in terms of accuracy.   
  
  
ENIAC contained 17,468 vacuum tubes, took up 1800 square feet of space, weighed 30 tons, and used 160 kilowatts of electricity. It could calculate 5,000 additions, 357 multiplications or 38 divisions in one second. Well lived, its development and research led to improvements of vacuum tubes.