# History of Computers

- Punched cards

- Analog Computers

    - Differential Analyzer

- Konrad Zuse

    - Z1, Z3

- Colossus Computer

- Atanasoff-Berry Computer

- ENIAC

- UNIVAC I

Punched Cards

- Is a piece of stiff paper that contains digital information represented by the presence or absence of holes in predefined positions.

- Herman Hollerith invented the recording of data on a medium that could then be read by a machine -- developing punched card data processing technology for the 1890 US census.

- From the 1900s, into the 1950s, punched cards were the primary medium for data entry, data storage, and processing in institutional computing.

Punched Card
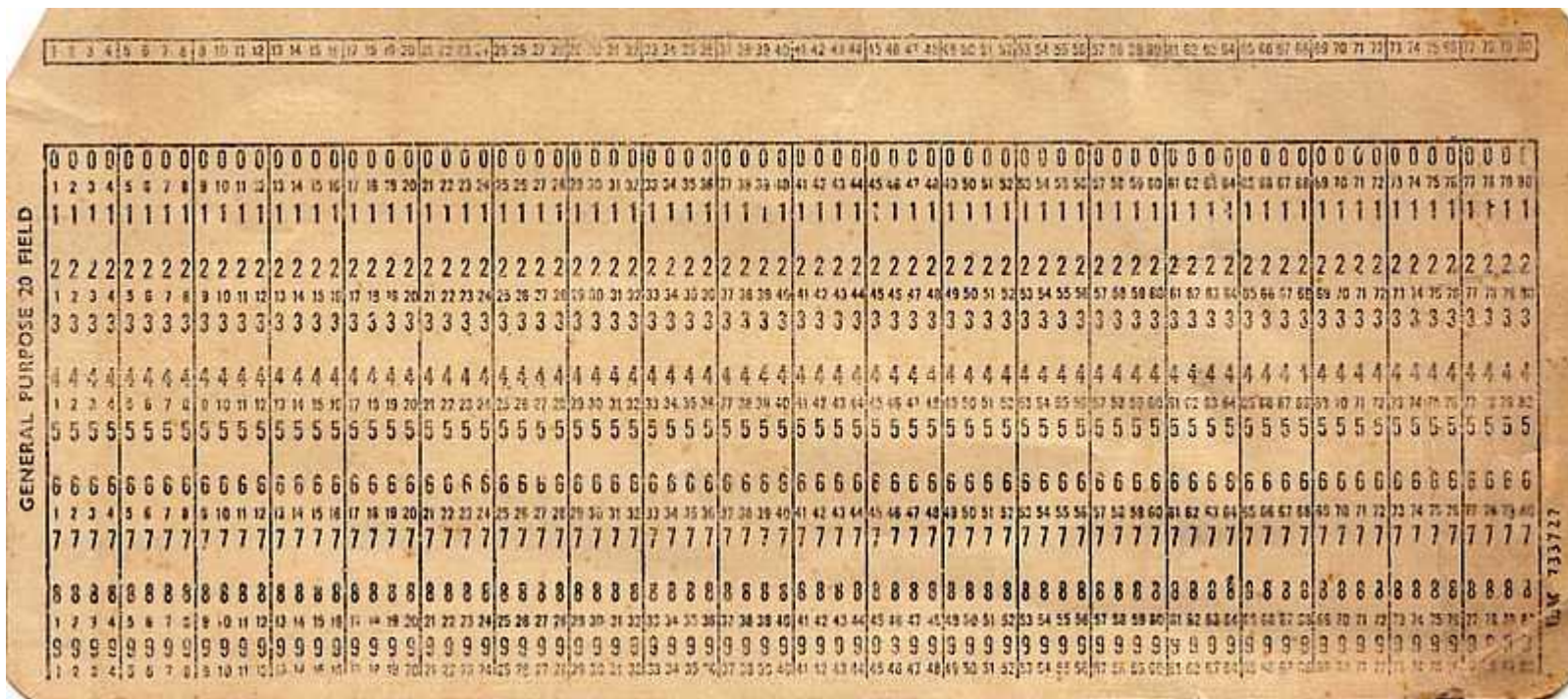
http://en.wikipedia.org/wiki/File:Punched_Card.jpg

Analog Computers

- Uses the continuously-changeable aspects of physical phenomena such as electrical, mechanical, or hydraulic quantities to model the problem being solved.

- World War II gun data computers.

- Mechanical and Electronic versions.

- Still used in some places.

- Limited by non-ideal effects.

Analog Computer

http://en.wikipedia.org/wiki/File:NewmarkAnalogueComputer.jpg

5

Differential Analyzer

- A mechanical analogue computer designed to solve differential equations by integration, using wheel-and-disc mechanisms to perform the integration.

- It was one of the first advanced computing devices to be used operationally.

- Eventually rendered obsolete by electronic analogue computers and, later, digital computers.

Differential Analyzer

Konrad Zuse

- Konrad Zuse (1910–1995) was a German civil engineer and computer pioneer. He built

  - Z1, a floating point binary mechanical calculator with limited programmability, reading instructions from a perforated 35 mm film (1938)

  - Z2, a revised version of the Z1, using telephone relays (1939)

  - S2 computing machine, considered the first process-controlled computer (1940)

  - Z3, the first fully operational electromechanical computer (1941)

  - Z4, which became the world's first commercial computer (1950)

Konrad Zuse

Copyright 2012 AU-KBC

9

Colossus Computer

- Electronic computing devices used by British codebreakers to help read encrypted German messages during World War II.

  - Used vacuum tubes (thermionic valves) to perform the calculations.

  - Colossus Mark 1 contained 1,500 electronic valves.

  - Colossus Mark 2 with 2,400 valves was both 5 times faster and simpler to operate than Mark 1

- Remained secret till 1970s due to which people who worked on it were not credited.

- A reconstructed Colossus Mark 2 is at The National Museum of Computing, in H Block Bletchley Park

Colossus Mk1/Mk2

http://en.wikipedia.org/wiki/File:Colossus.jpg
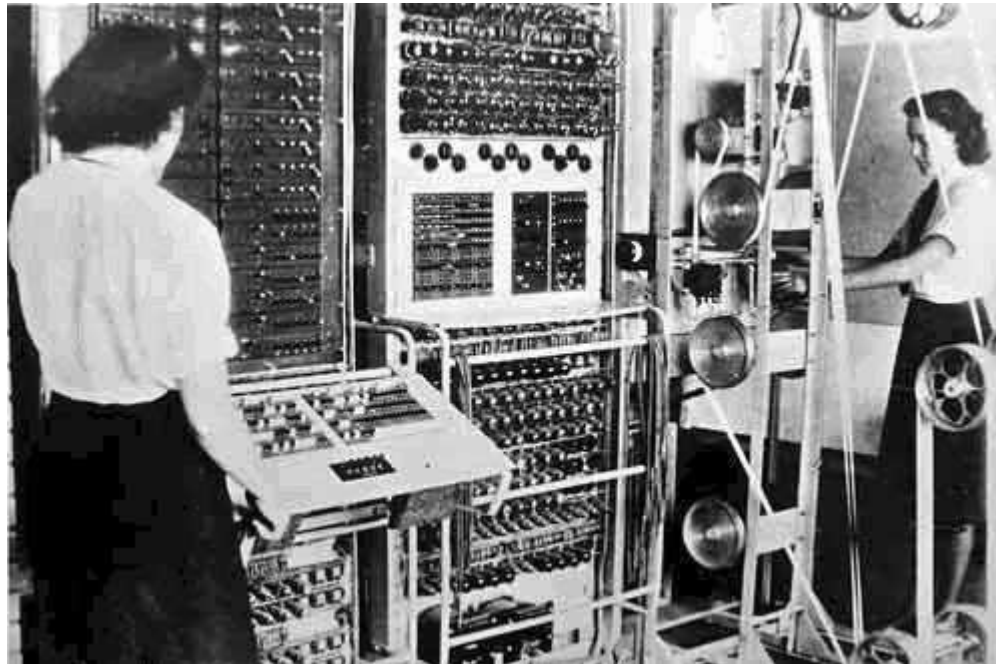
Atanasoff-Berry Computer

- The first electronic digital computing device.

  - Conceived in 1937, the machine was not programmable, being designed only to solve systems of linear equations. It was successfully tested in 1942.

- Pioneered important elements of modern computing, including binary arithmetic and electronic switching elements.

- It was not a Turing complete computer, which distinguishes it from more general machines.

Atanasoff-Berry Computer replica

http://en.wikipedia.org/wiki/File:Atanasoff-Berry_Computer_at_Durhum_Center.jpg
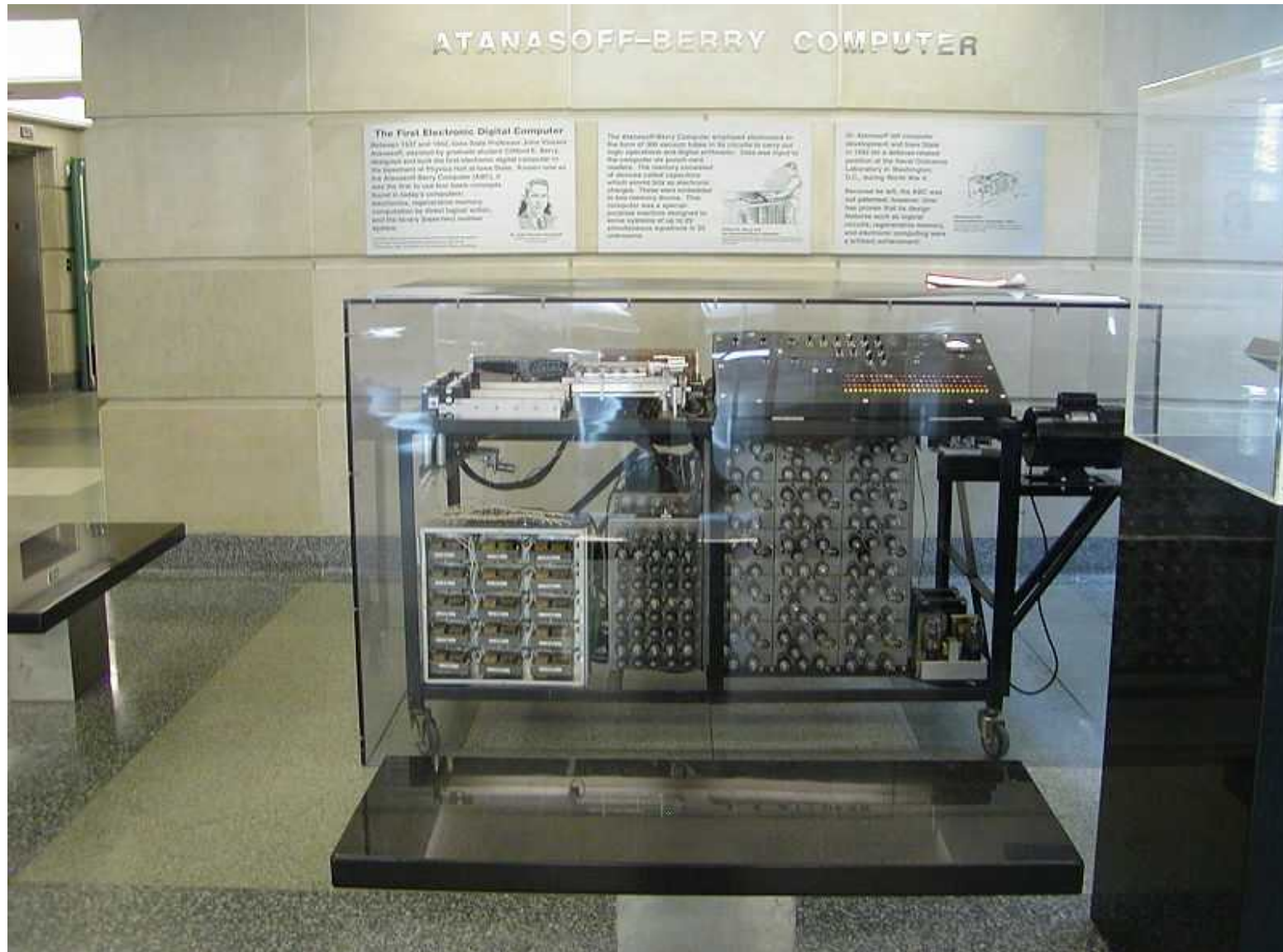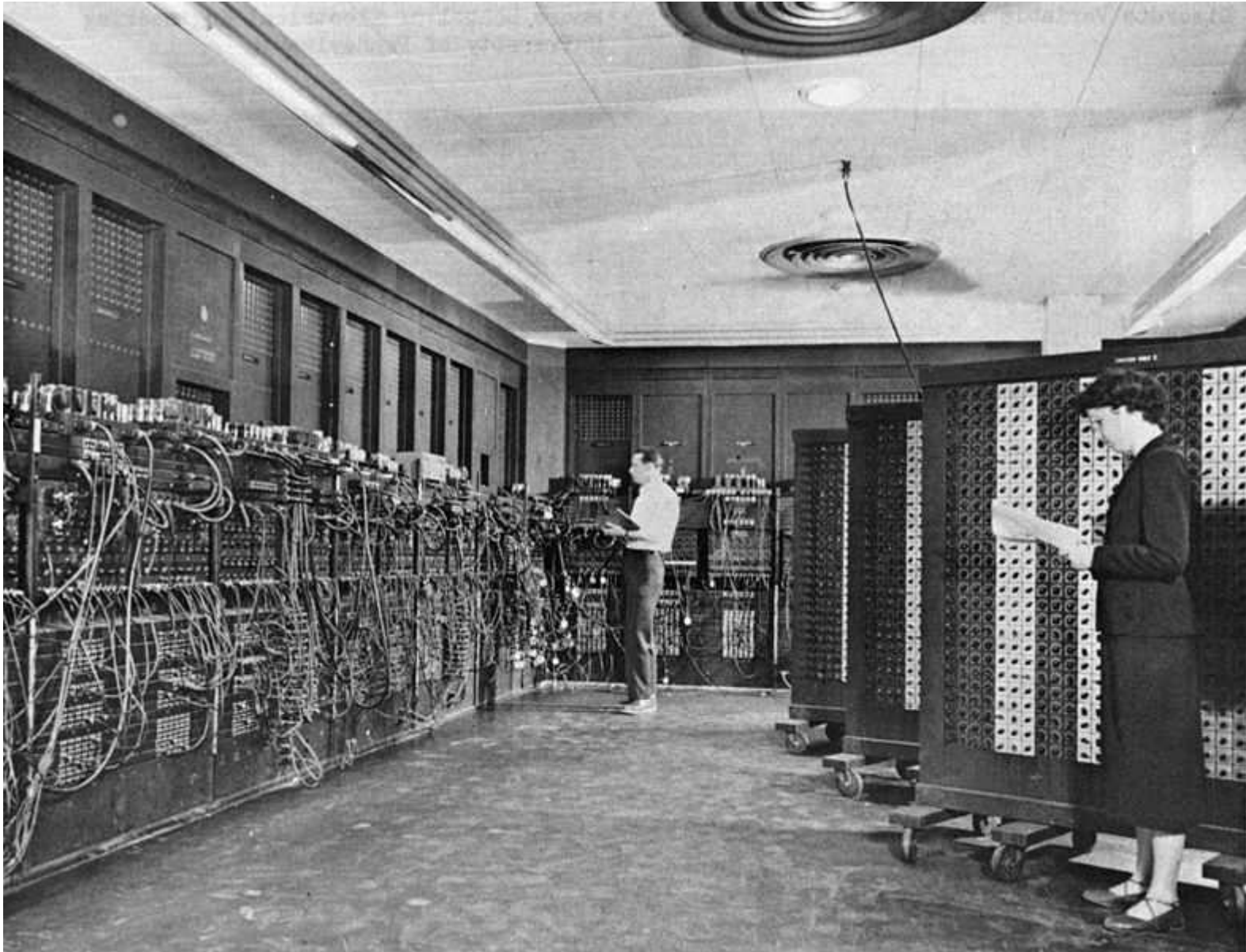
ENIAC

- Electronic Numerical Integrator And Computer
    - The first general-purpose electronic computer.
    - A Turing-complete digital computer capable of being reprogrammed to solve a full range of computing problems.
- Originally designed to calculate artillery firing tables for the United States Army's Ballistic Research Laboratory by John Mauchly and J. Presper Eckert of the University of Pennsylvania
- Used from 1947 to 1955.

ENIAC

- ENIAC contained 17,468 vacuum tubes, 7,200 crystal diodes, 1,500 relays, 70,000 resistors, 10,000 capacitors and around 5 million hand-soldered joints.

- It weighed more than 30 short tons (27 t), was roughly 8 by 3 by 100 feet (2.4 m × 0.9 m × 30 m), took up 1800 square feet (167 sq.m), and consumed 150 kW of power.

- Input was possible from an IBM card reader, and an IBM card punch was used for output.

ENIAC

16

http://en.wikipedia.org/wiki/File:Eniac.jpg

UNIVAC I

- (UNIVersal Automatic Computer I)

- The first commercial computer produced in the United States.

- It was designed principally by J. Presper Eckert and John Mauchly, the inventors of the ENIAC.

- Design work was begun by their company, Eckert-Mauchly Computer Corporation, and was completed after the company had been acquired by Remington Rand.
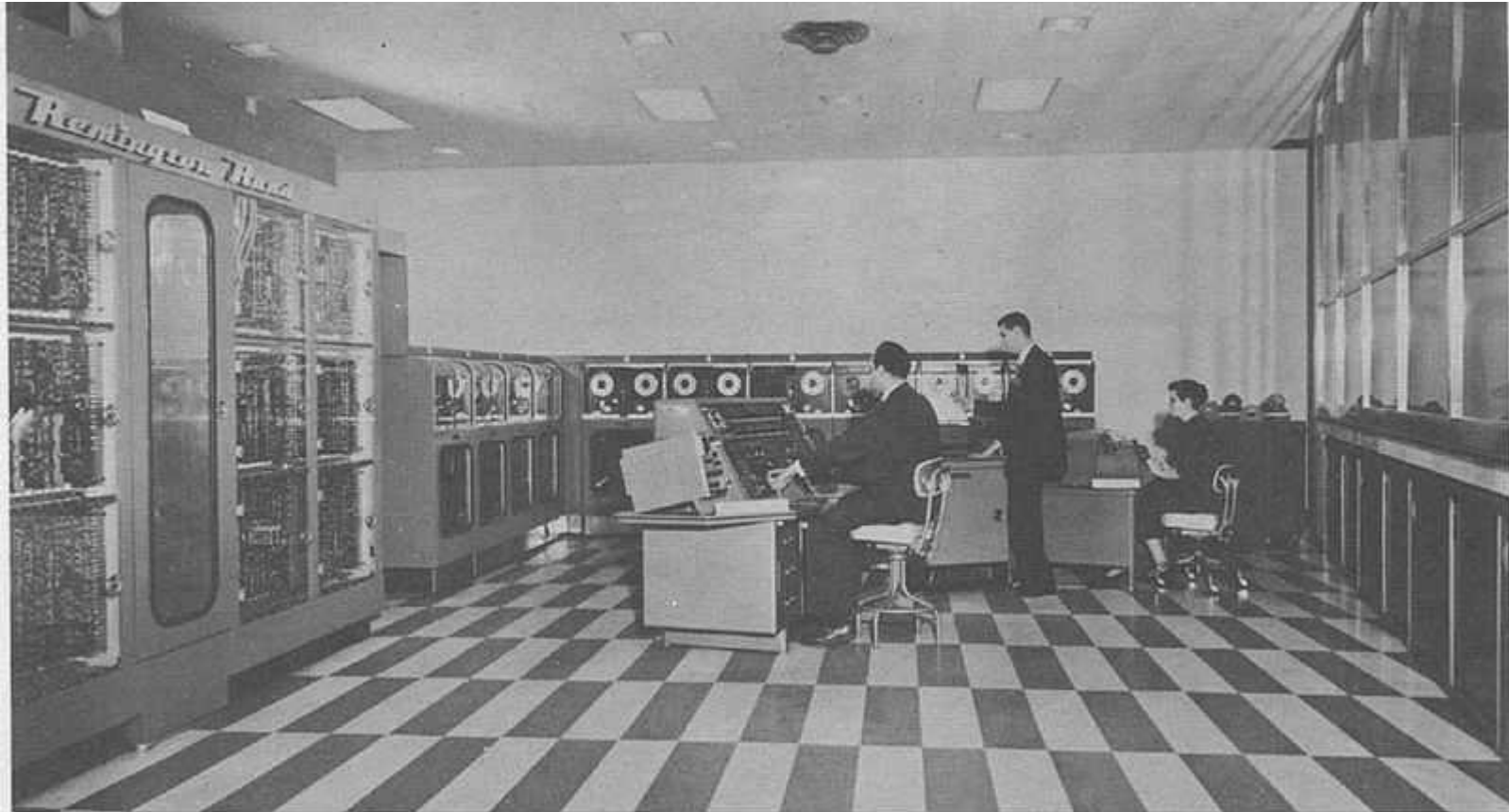
UNIVAC I

- The first UNIVAC was delivered to the United States Census Bureau on March 31, 1951, and was dedicated on June 14 that year.

- The fifth machine (built for the U.S. Atomic Energy Commission) was used by CBS to predict the result of the 1952 presidential election. With a sample of just 1% of the voting population it correctly predicted that Dwight Eisenhower would win.

- Originally priced at US$159,000, the UNIVAC I rose in price until they were between $1,250,000 and $1,500,000. A total of 46 systems were eventually built and delivered.

UNIVAC I

- UNIVAC I used 5,200 vacuum tubes, weighed 29,000 pounds (13 metric tons), consumed 125 kW, and could perform about 1,905 operations per second running on a 2.25 MHz clock.

- The Central Complex alone (i.e. the processor and memory unit) was 4.3 m by 2.4 m by 2.6 m high.

- The complete system occupied more than 35.5 m² of floor space.

UNIVAC I

http://en.wikipedia.org/wiki/File:UNIVAC-I-BRL61-0977.jpg

UNIVAC I – Operator Console

http://en.wikipedia.org/wiki/File:Museum_of_Science,_Boston,_MA_-_IMG_3163.JPG

Thank You.