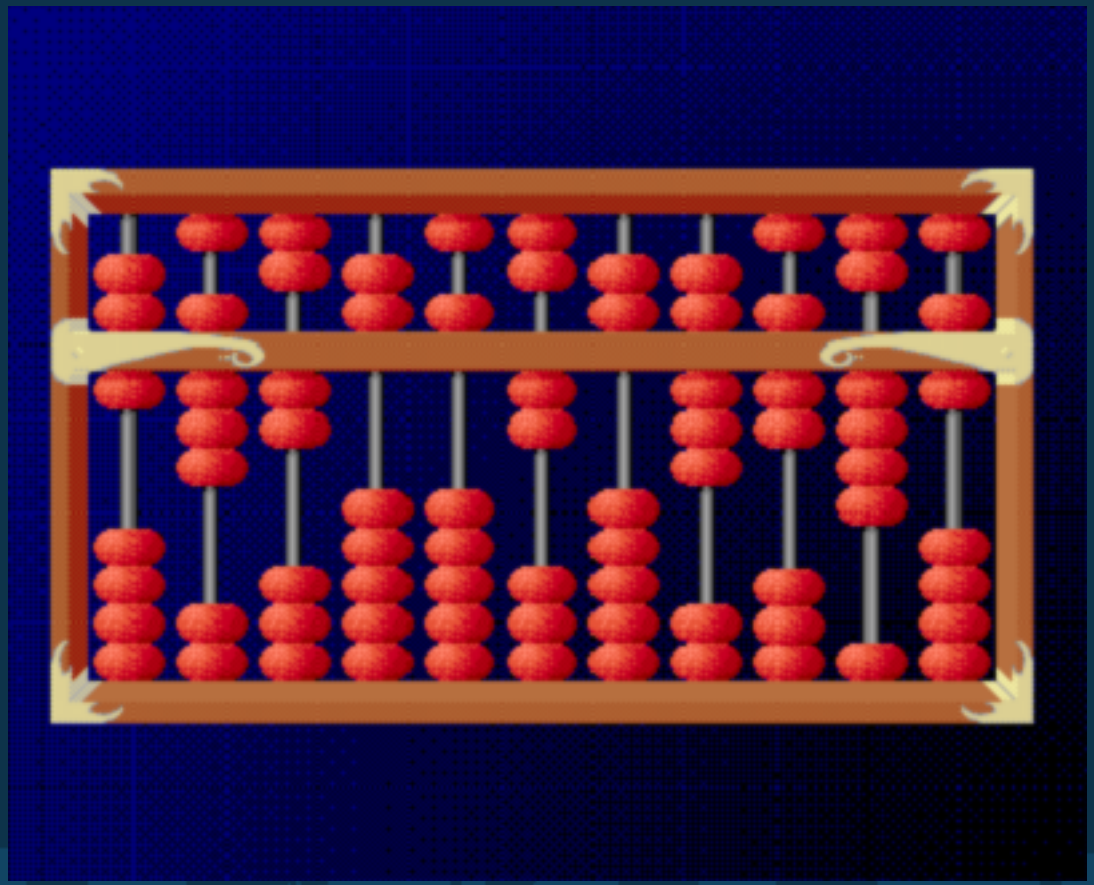
Brief History of Computer Science

- Ancestor of computers
- Birth of the ultimate computer
- Birth of computer science
- Recent scientific breakthroughs

Ancestor of computers

4300 years ago

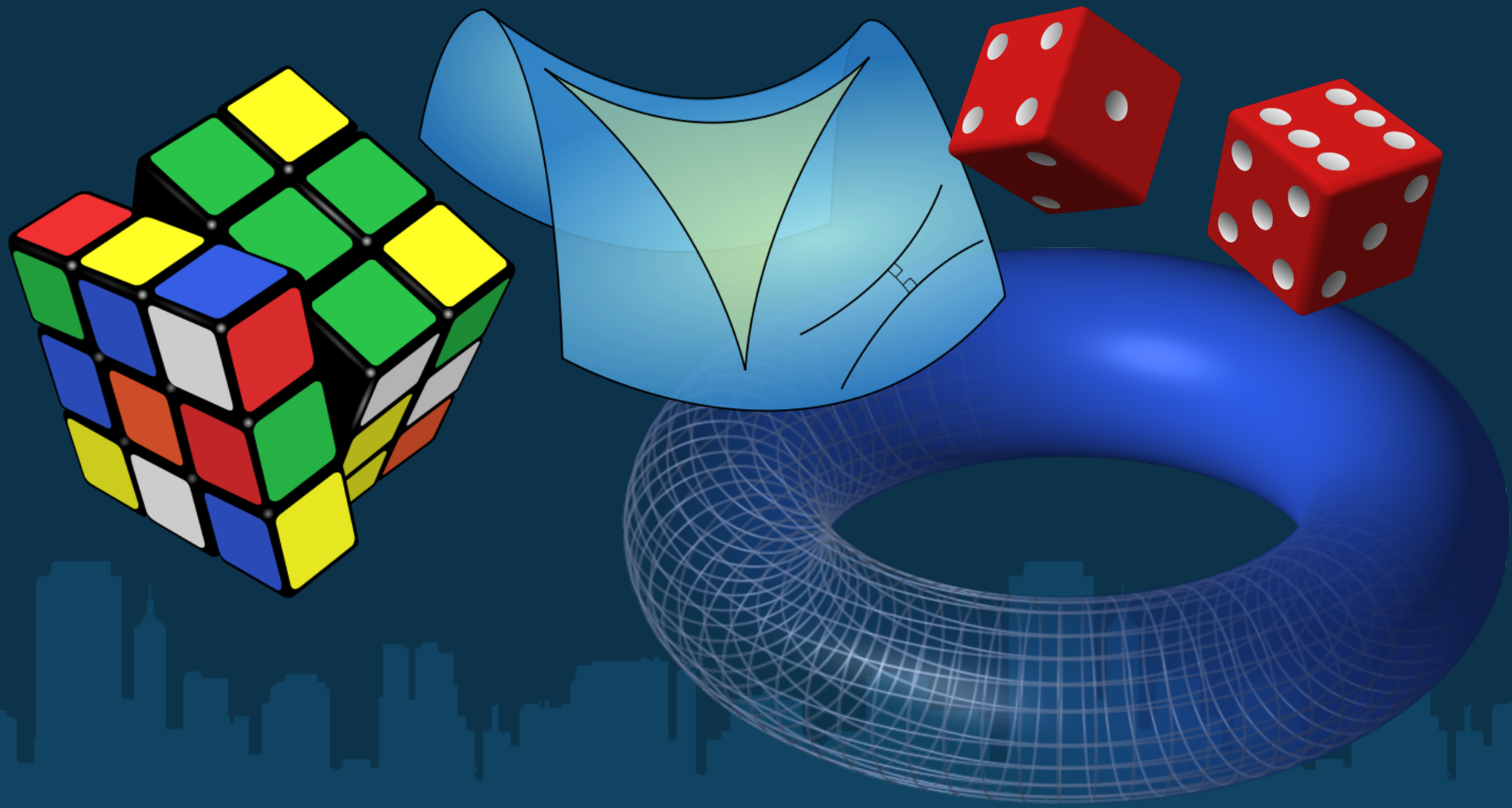
Babylonia



A very large Abacus

Stores 100s of Bytes!!!

Mathematics Flurished



How to process information mechanically?

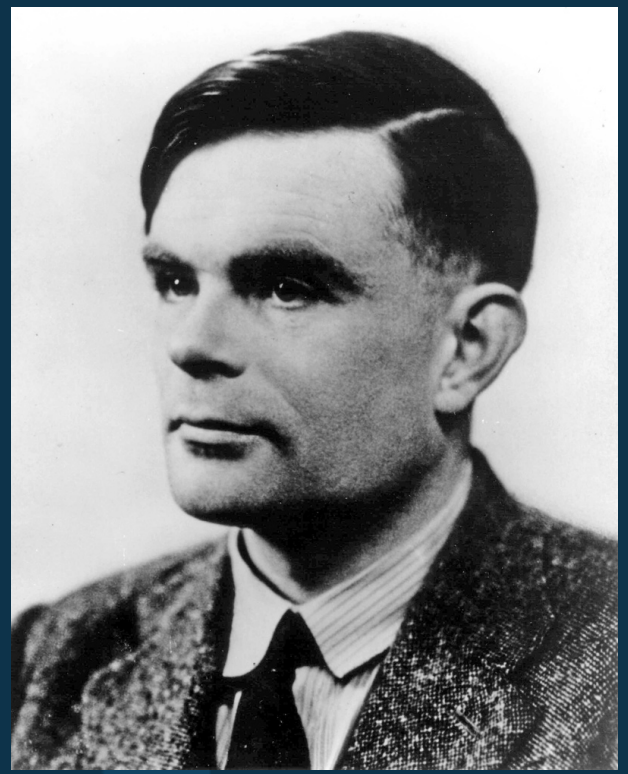
In 1928

Alan Turing

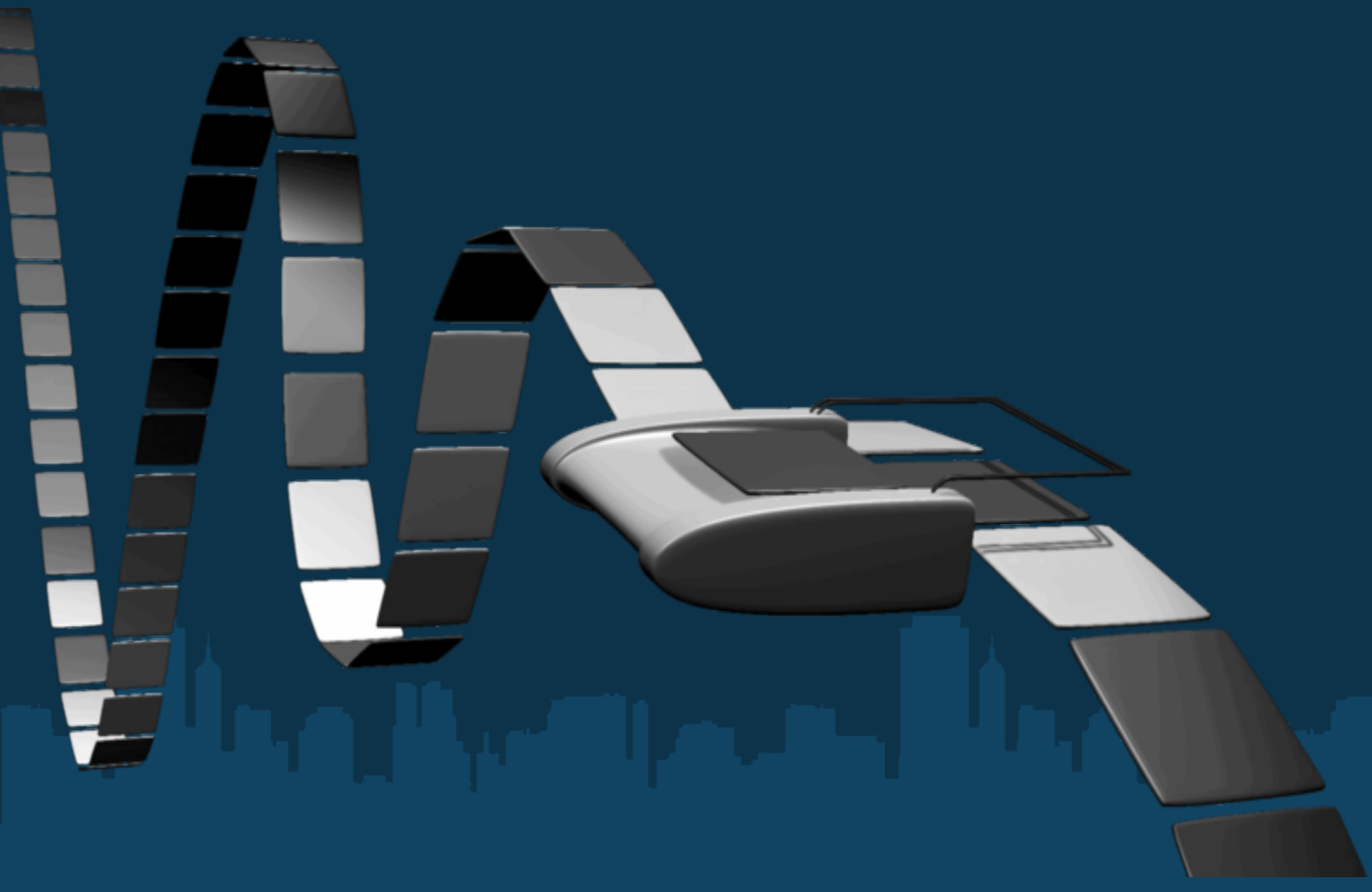
8 years later (in 1936)

A Computer

- What It Can Do?
- What It Cannot Do?

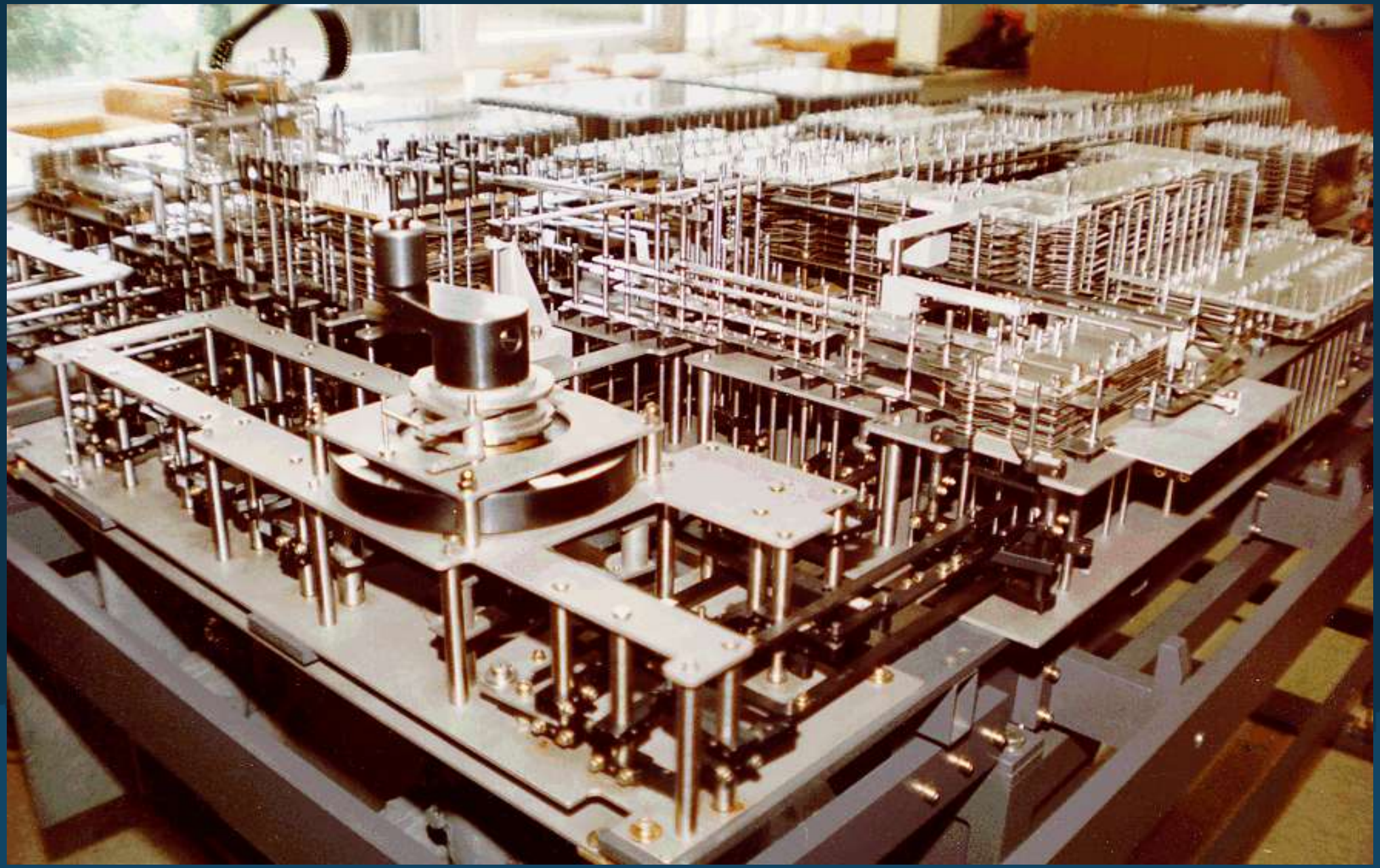


Turing Machine



The Z1 Computer

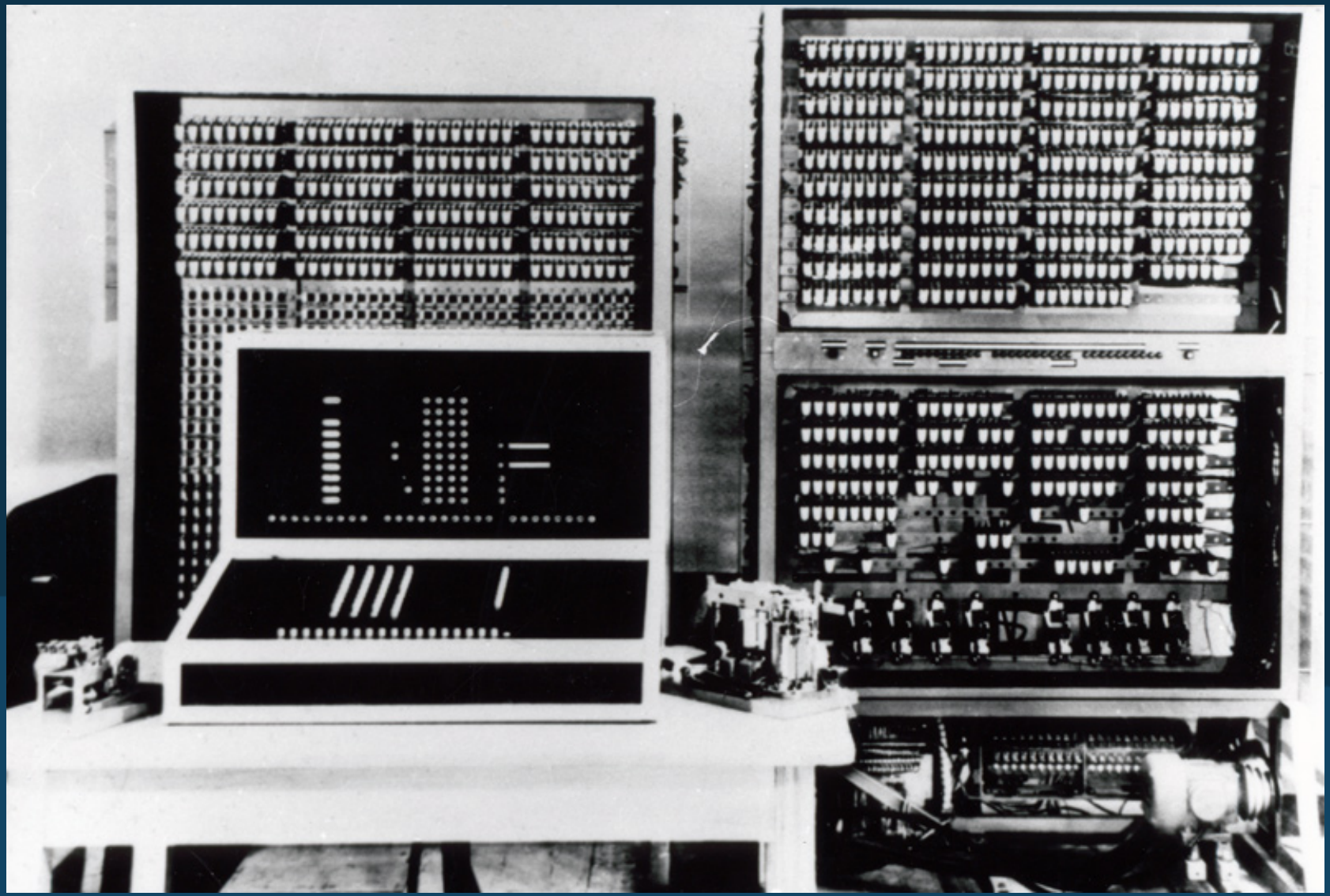
in 1936



Konrad Zuse

First Turing-Compleate Computer

5 years later in 1941



Name	First operational	Numeral system	Computing mechanism	Programming	Turing complete
Zuse Z3 (Germany)	May 1941	Binary	Electro-mechanical	Program-controlled by punched film stock	Yes (1998)
Atanasoff–Berry Computer (US)	mid-1941	Binary	Electronic	Not programmable—single purpose	No
Colossus (UK)	January 1944	Binary	Electronic	Program-controlled by patch cables and switches	No
Harvard Mark I – IBM ASCC (US)	1944	Decimal	Electro-mechanical	Program-controlled by 24-channel punched paper tape (but no conditional branch)	No
ENIAC (US)	November 1945	Decimal	Electronic	Program-controlled by patch cables and switches	Yes
Manchester Small-Scale Experimental Machine (UK)	June 1948	Binary	Electronic	Stored-program in Williams cathode ray tube memory	Yes
Modified ENIAC (US)	September 1948	Decimal	Electronic	Program-controlled by patch cables and switches plus a primitive read-only stored programming mechanism using the Function Tables as program ROM	Yes
EDSAC (UK)	May 1949	Binary	Electronic	Stored-program in mercury delay line memory	Yes
Manchester Mark I (UK)	October 1949	Binary	Electronic	Stored-program in Williams cathode ray tube memory and magnetic drum memory	Yes
CSIRAC (Australia)	November 1949	Binary	Electronic	Stored-program in mercury delay line memory	Yes

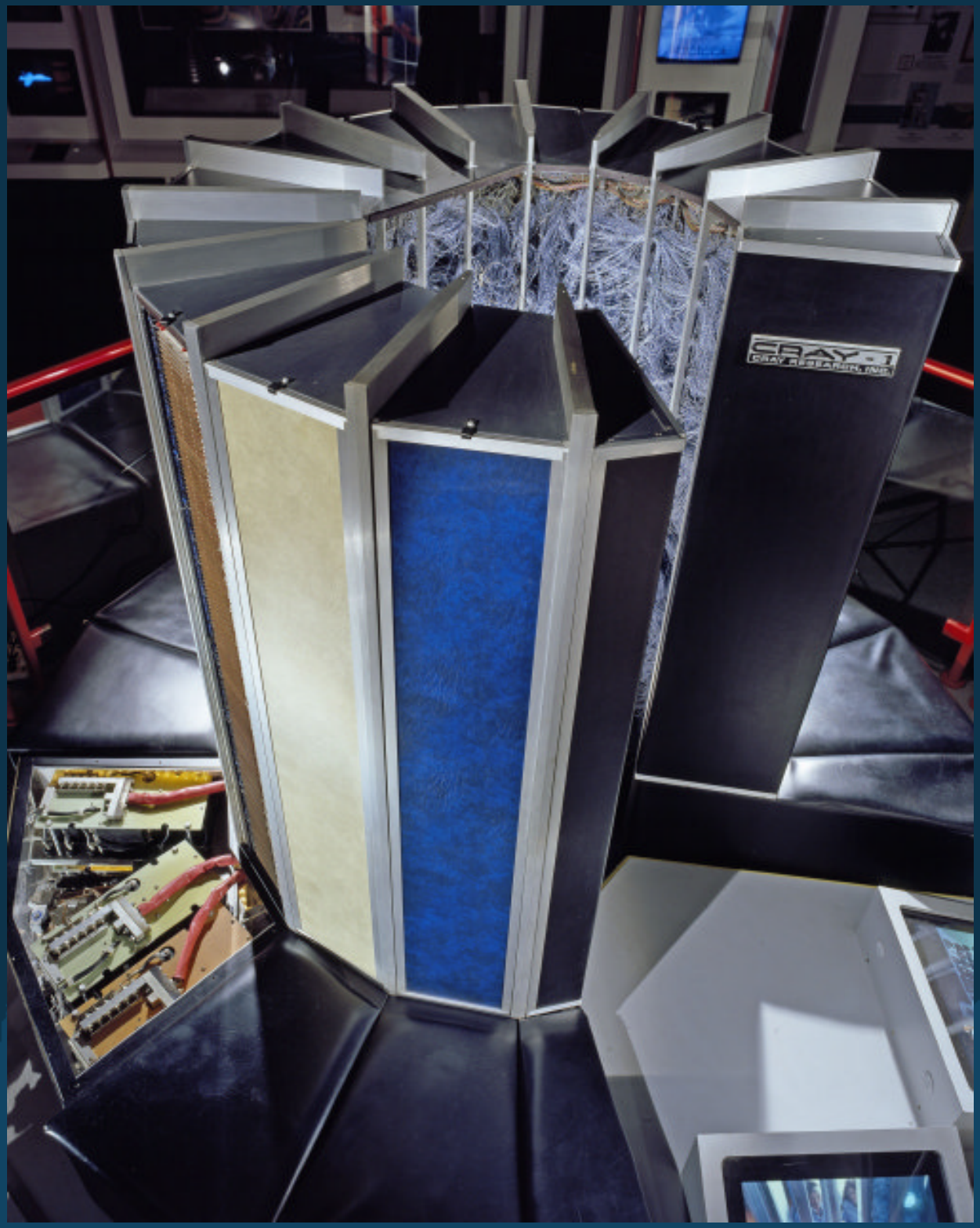
First Computer "Bug"

6 year later (in 1947)

Harvard Mark II Computer

First Super Computer

1970s

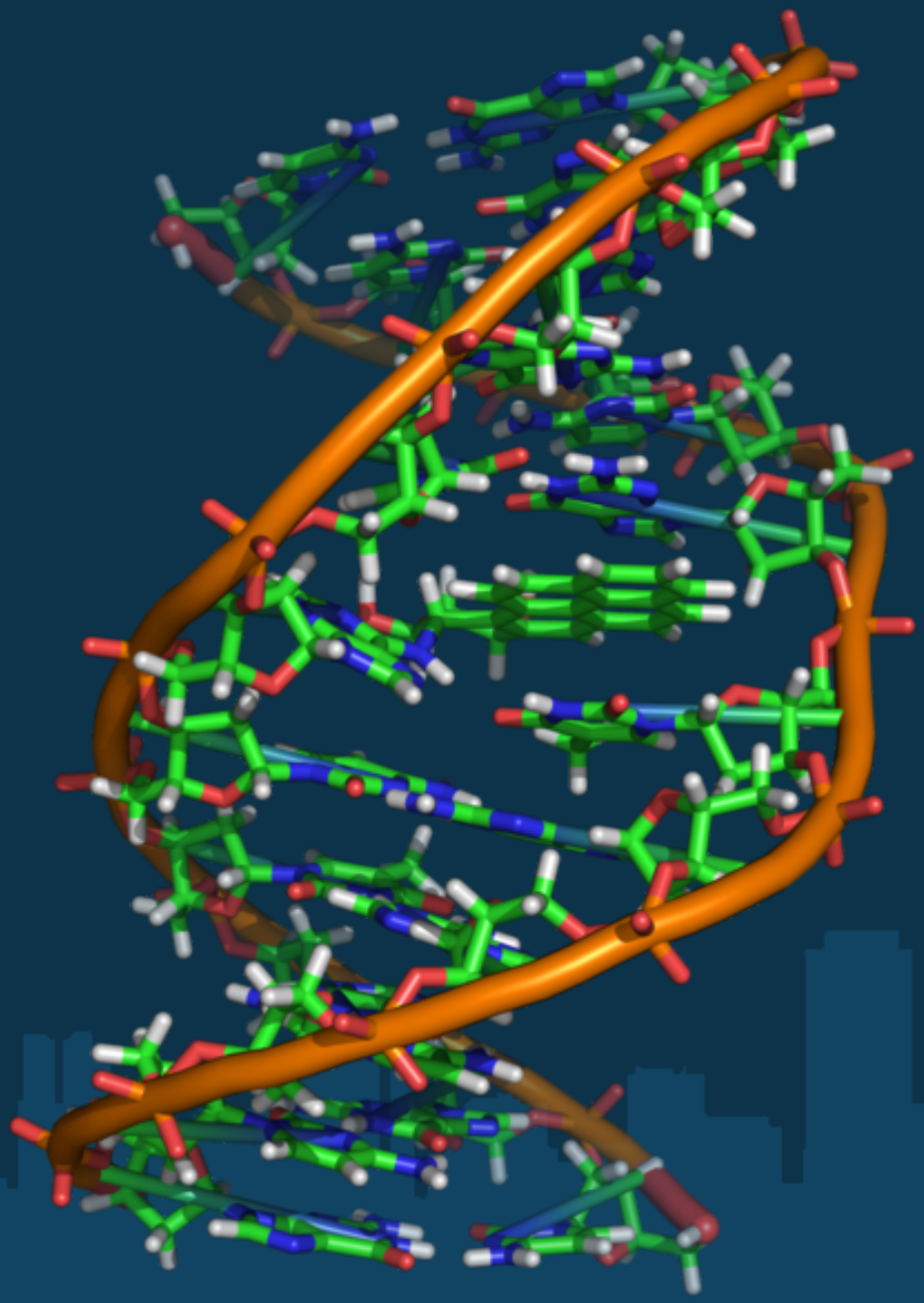


Personal Computer

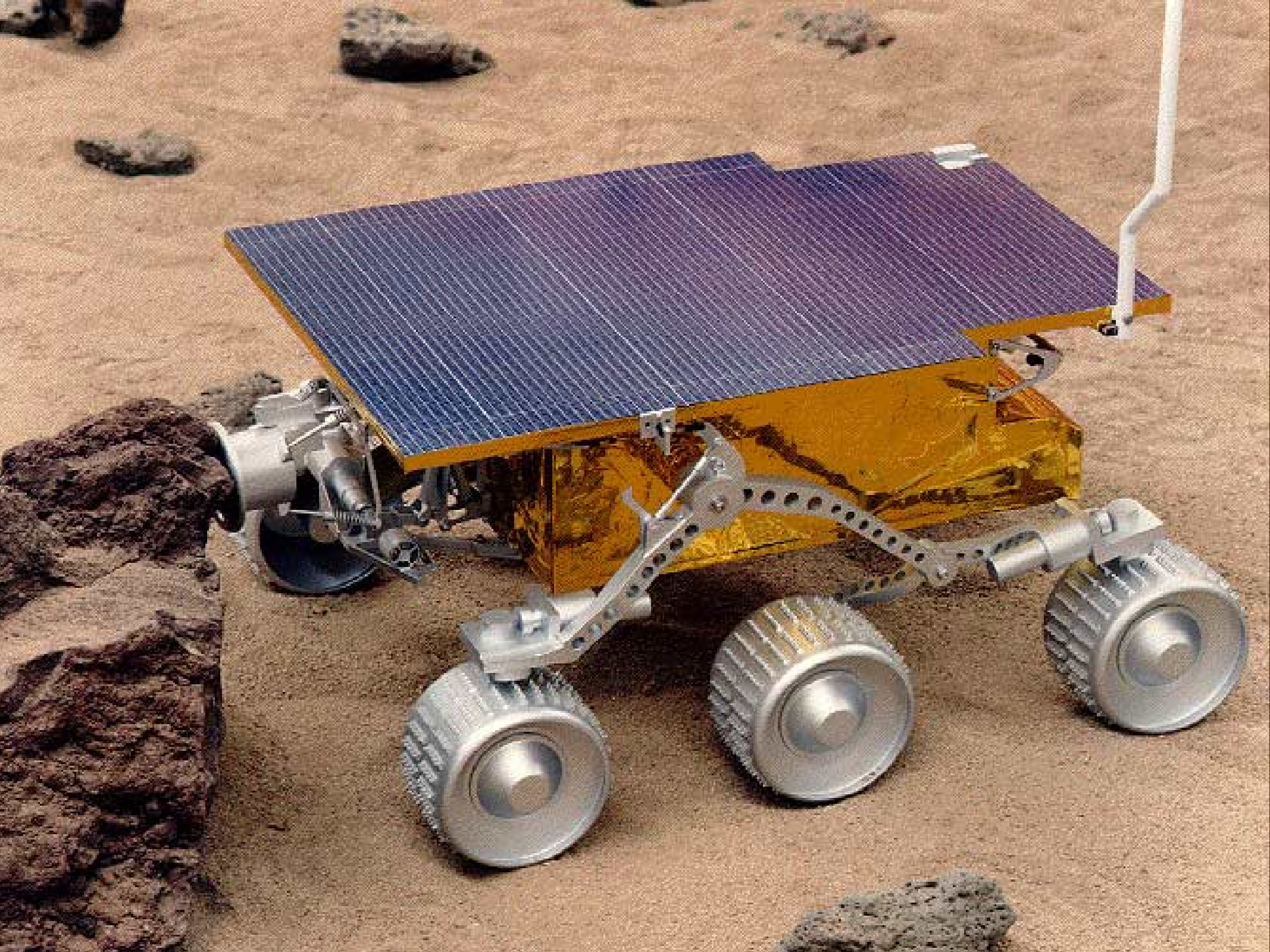
1980s

The Human Genome Project

1990s



Video



CAT
GM
19
Carnegie Mellon
Continental
APPLIMIX
Google
NetApp
intel
ibeo
vector

Video

Brief History of Computer Science

- Abacus
- Turing Machine
- Progress in Computer Science
- Great things done

Future

More, Faster, Greater ...

Abacus

Turing Machine

Progress in Computer Science

Great things done

Future: More, Faster, Greater ...

Google for "Computer Science History"

Backup Slides

First CS Department

15 years later (in 1962)
Purdue University (Indiana, USA)

Computer Science Flourishes

1970s

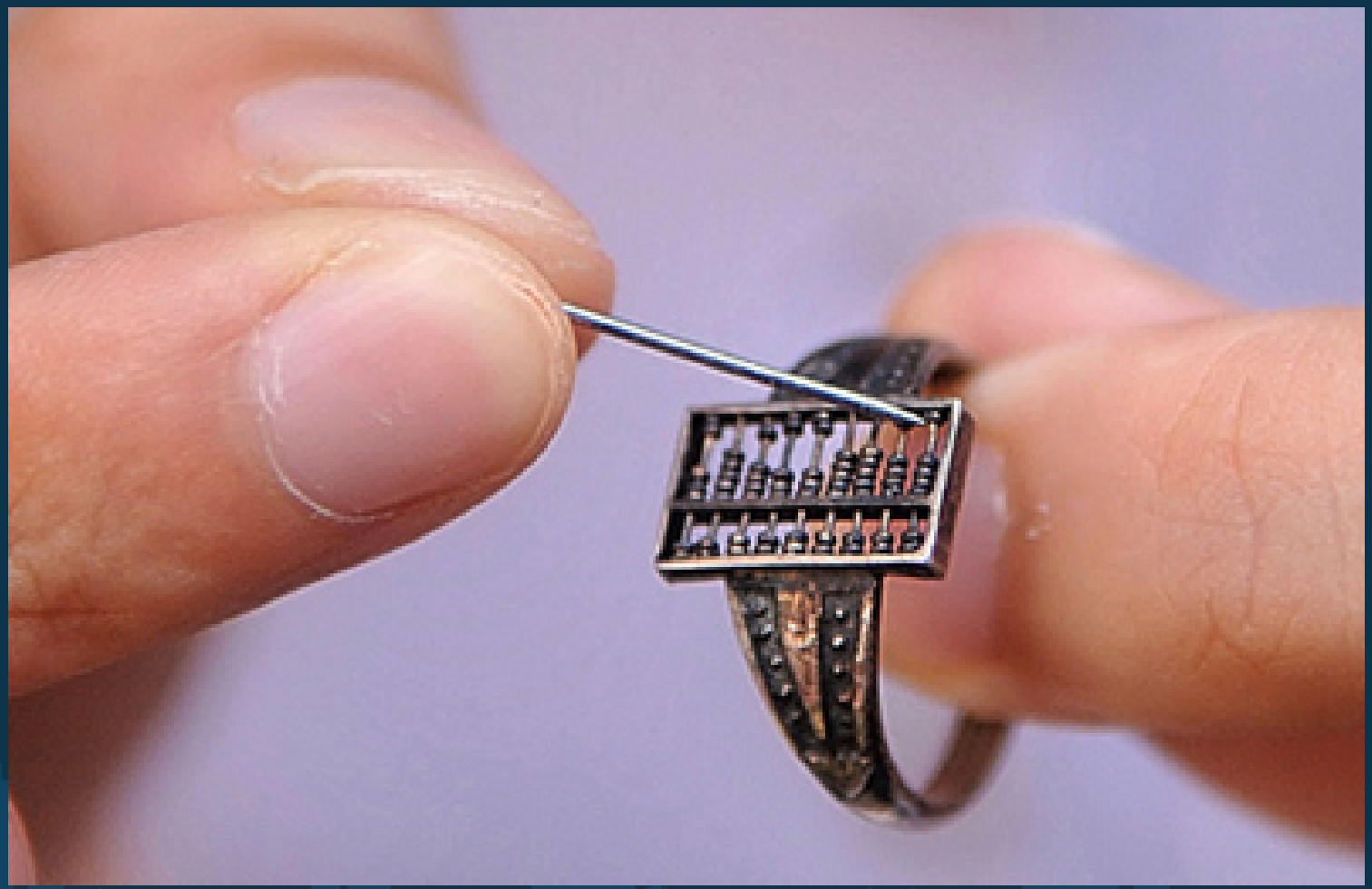
- Unix - influential operating system
- Databases - major advancements
- C - influential programming language
- CRAY-1 - the first super computer

- The question of NP-completeness

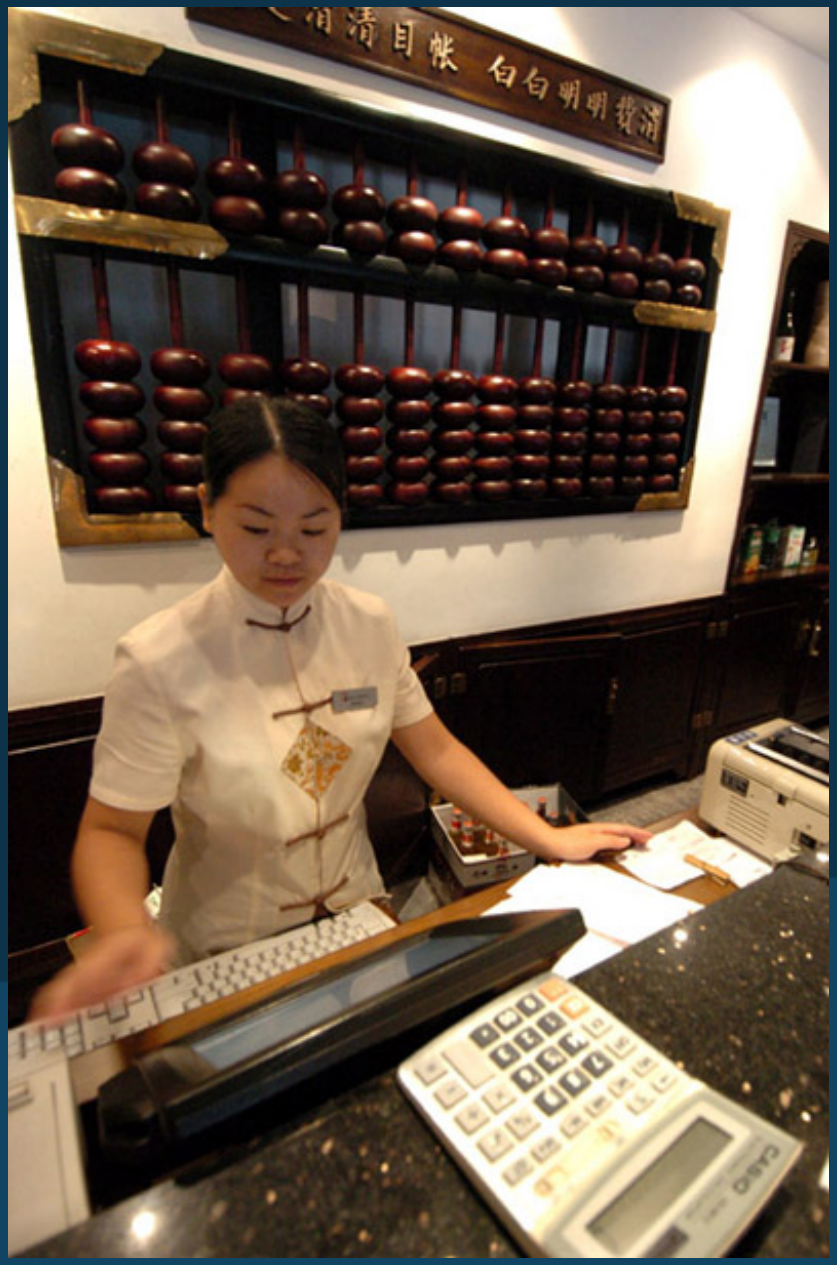
Modernized Abacus

Electronic Abacus

Getting Smaller



Yet Another Abacus



Computer Science Flourishes

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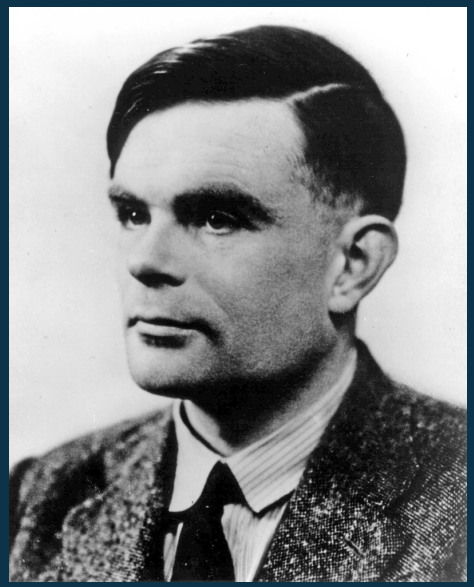
Turing Machine