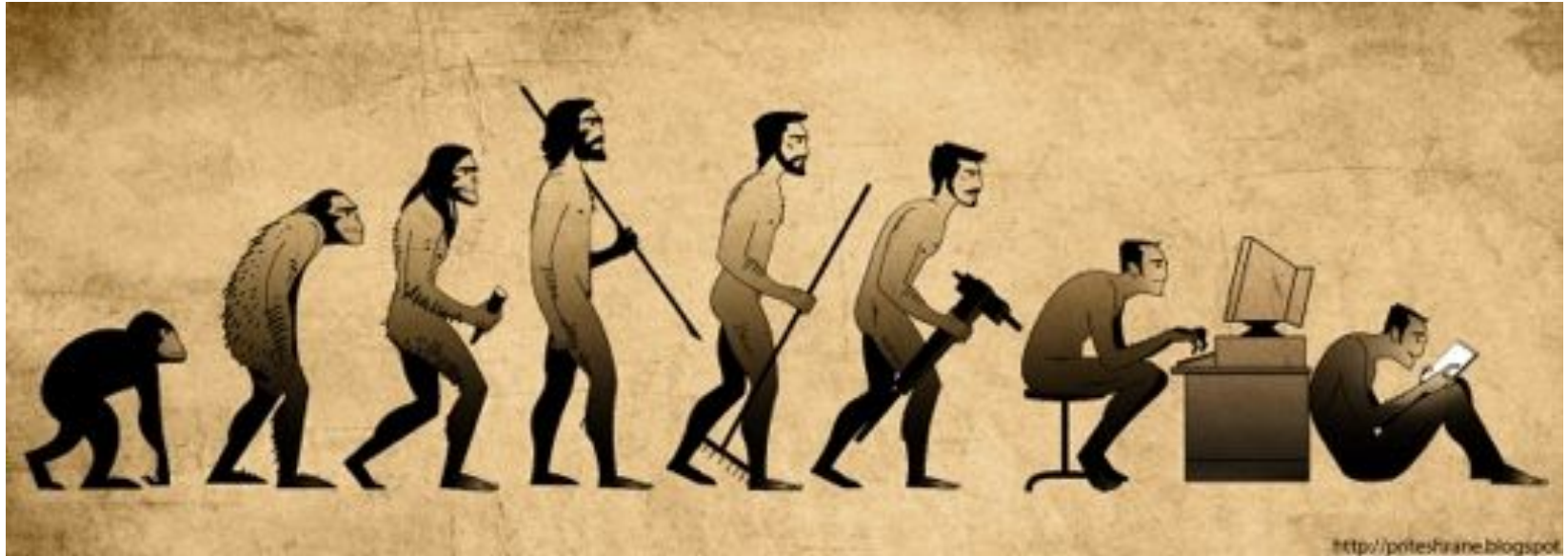


Brief History of Computing and Data



Brief History of Computing and Data



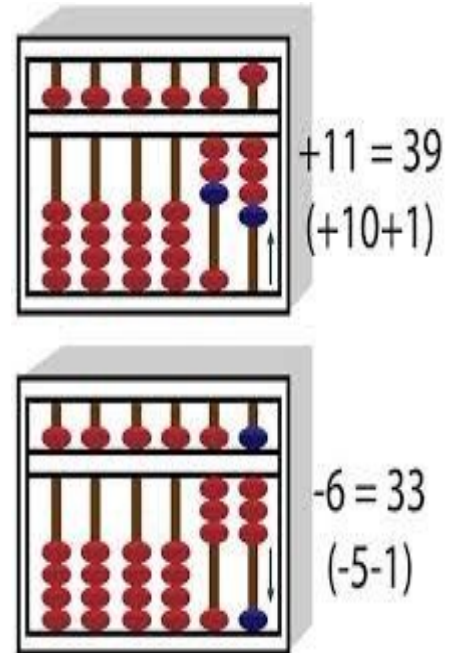
- What is this ? :)



Brief History of Computing and Data



- ~ 18,000BC – Uganda, Ishango Bone
- ~ 2400BC – Babylon abacus, libraries
- 300BC – 48AD – Library of Alexandria



Brief History of Computing and Data



- How about this modern recreation of a 2000 years old device?



Brief History of Computing and Data



- **~ 100-200AD**
Antikythera Mechanism

Predicting:

- Astrology
- Astronomy
- Olympics
- Calendar



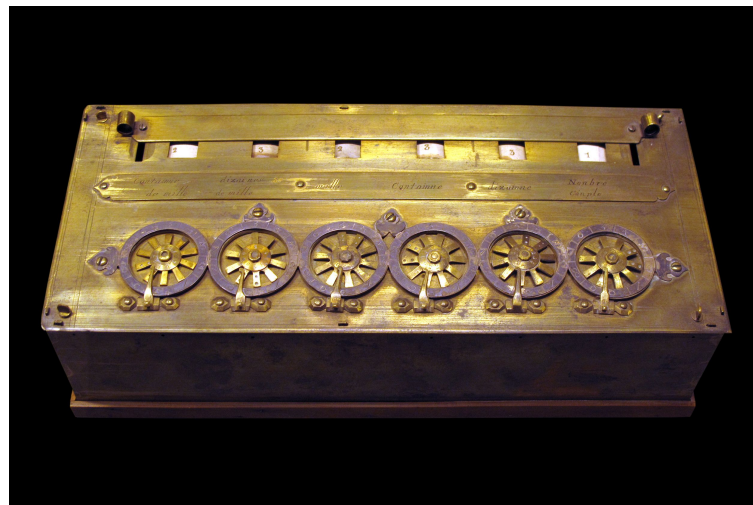
Brief History of Computing and Data



- **1642 Blaise Pascal's
Pascaline**

Performs:

- Addition
- Subtraction
- Multiply/Divide using Add/Sub
- 1649 Royal Patent by Louis XIV



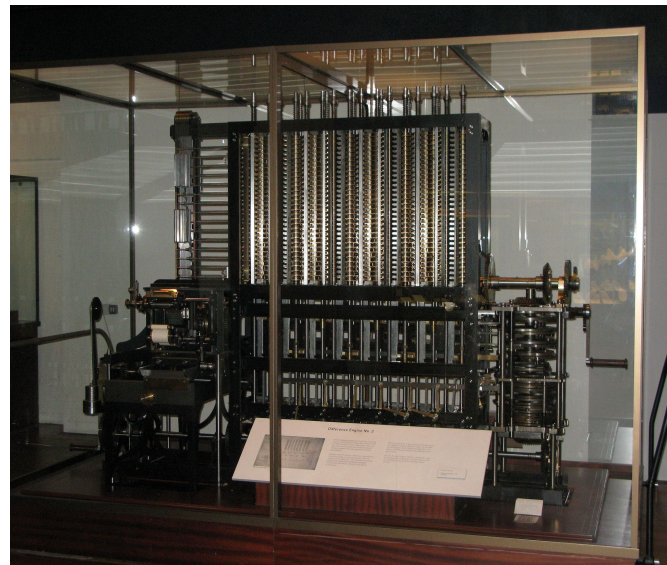
Brief History of Computing and Data



- **Charles Babbage
Difference Engine**

Performs:

- Arithmetic
- Derivation
- Power Series
- Curve Fitting



Brief History of Computing and Data



- **Ada Lovelace**
(1815-1852)
- First Programmer?

Popularized:

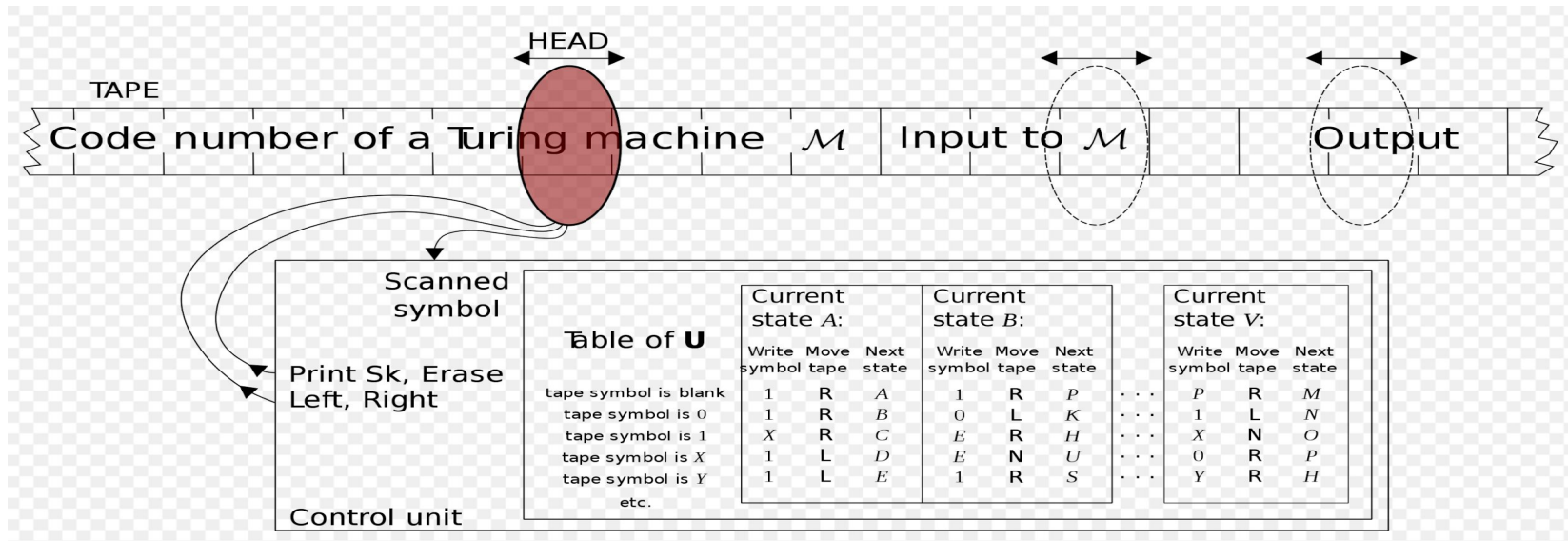
- Algorithms
- Babbage's Machines
-



Brief History of Computing and Data



universal Turing machine - from Alan Turing (1912-1954)



Brief History of Computing and Data



- **Alonzo Church**
(1903-1995)
- **λ (lambda)-calculus - functional programming**

1930s

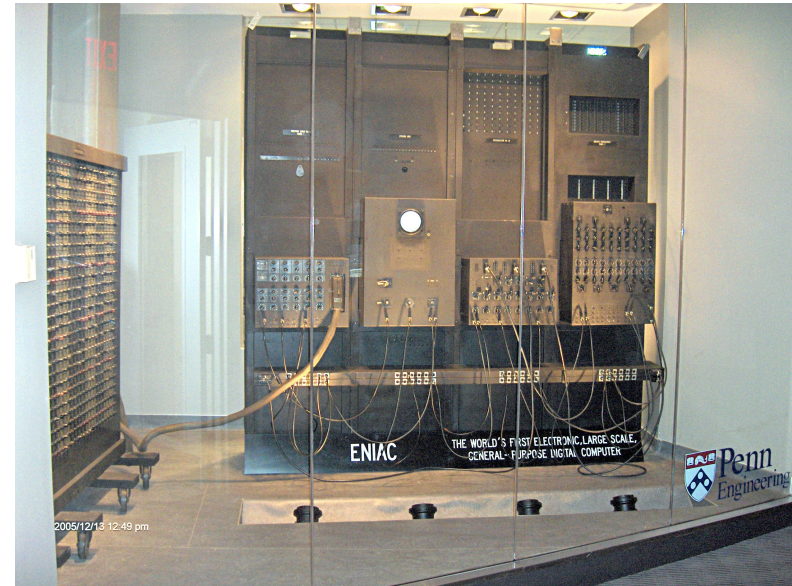
- Church–Turing thesis
- Princeton (Godel, Turing, von Neumann)



Brief History of Computing and Data



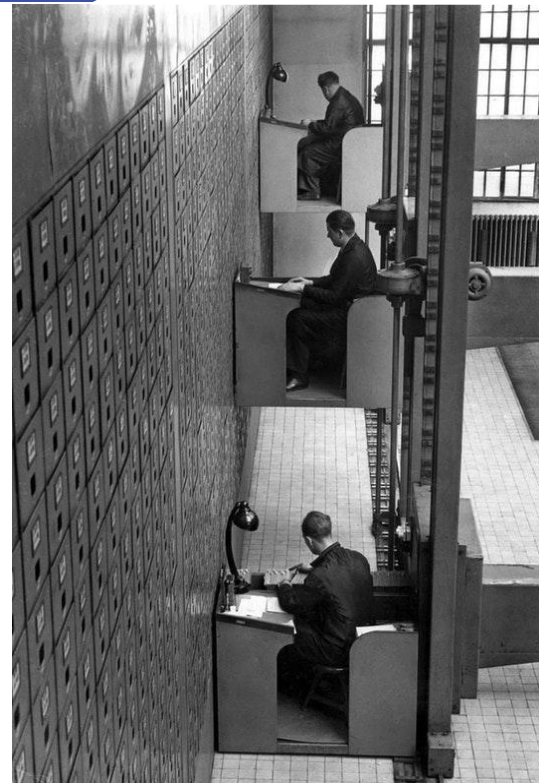
- 1940s - First General Purpose Electronic Computer ENIAC (Zuse mechanical)
- Turing complete
- von Neumann architecture
- most computers work the same today



Brief History of Computing and Data



- 1950s - Flat Files
- 1958 – IBM's Luhn defines Business Intelligence
- 1960s - CODASYL
- 1970s – Codd's relational DBs -> SQL
- 1980s – Data Warehouses / Marts
- 2000s – Big Data / noSQL DBs
- 2010 - Cloud services / AWS / GCP / Azure



Programming Language history



- 1940s: connecting wires to represent 0s and 1s
- 1950s: assemblers, FORTRAN, COBOL, LISP
- 1960s: ALGOL, BCPL(-> B -> C), SIMULA, PASCAL, BASIC
- 1970s: Prolog, FP, ML, Miranda
- 1980s: Eiffel, C++
- 1990s: Haskell, Java, **Python**
- 2000s: D, C#, Spec#, F#, X10, Fortress, Scala, Ruby
- 2010s: Agda, Coq, ...

Python creation



**Python created by Dutch programmer Guido van Rossum in early 1990s
(later at Google,Dropbox) - named after Monthy Python**



Benevolent dictator for life (BDFL) - retired

Python popularity



Growth of major programming languages

Based on Stack Overflow question views in World Bank high-income countries

