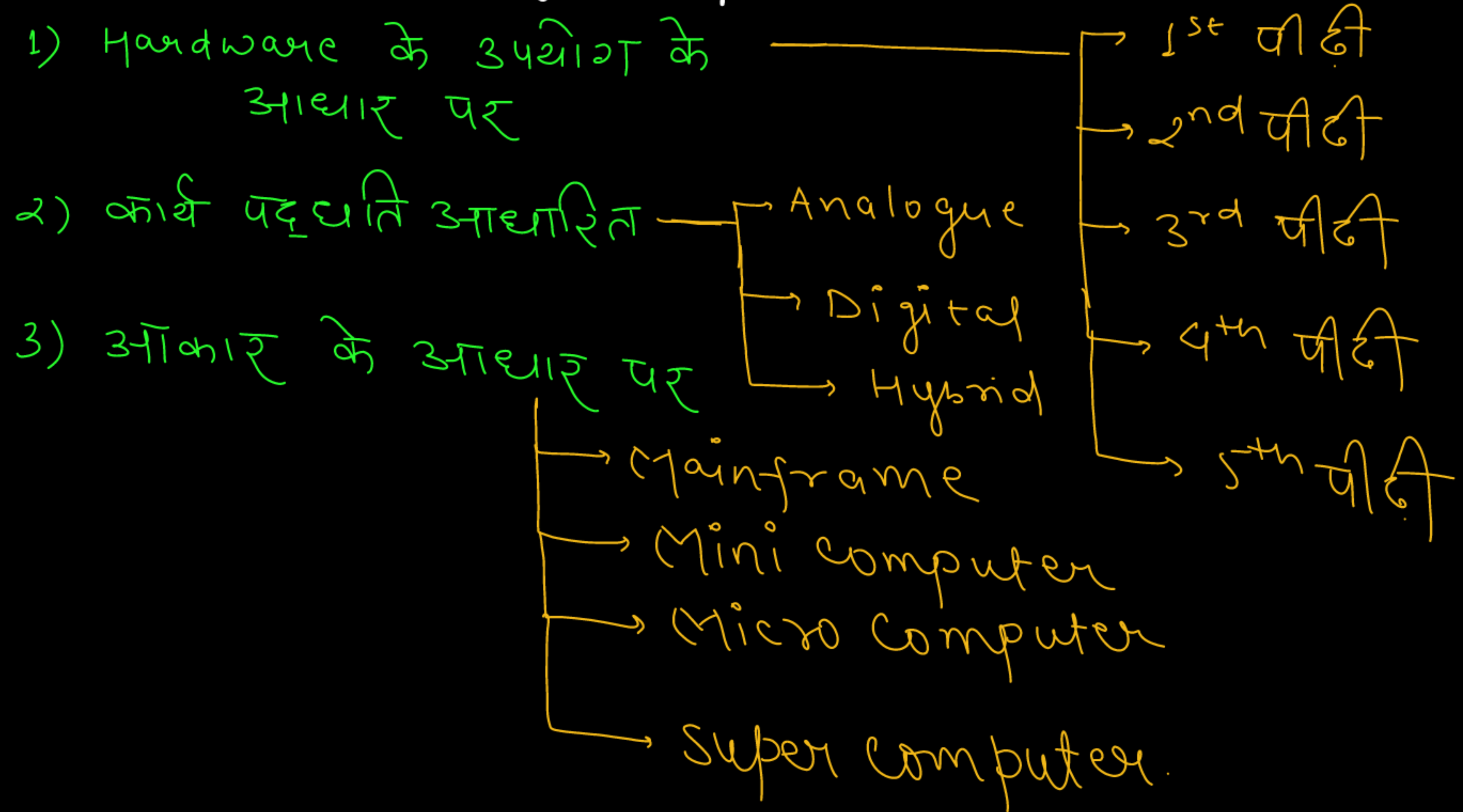


Development of Computer.

* Classification of Computer (वर्गीकरण)



1) Hardware के आधार पर

(i) 1st Generation Computers: (1942-1955)

↳ निर्माण → vacuum tubes a.k.a valve
निर्वात ट्यूब

↳ Software → मशीनी भाषा
↳ निम्न स्तरीय
प्रोग्राम भाषा



Punch Card in
Punch Card Machine



↳ Storage → Punch-card & Paper tape
संश्लेषण

↳ speed गति → milli-seconds
 $1ms = 10^{-3}sec$

↳ उपयोग → Scientific research
वैज्ञानिक अनुसंधान
→ सेना कार्य → Army.

↳ दोष/गुण (Merits & demerits)

↳ भारी - Bulky.

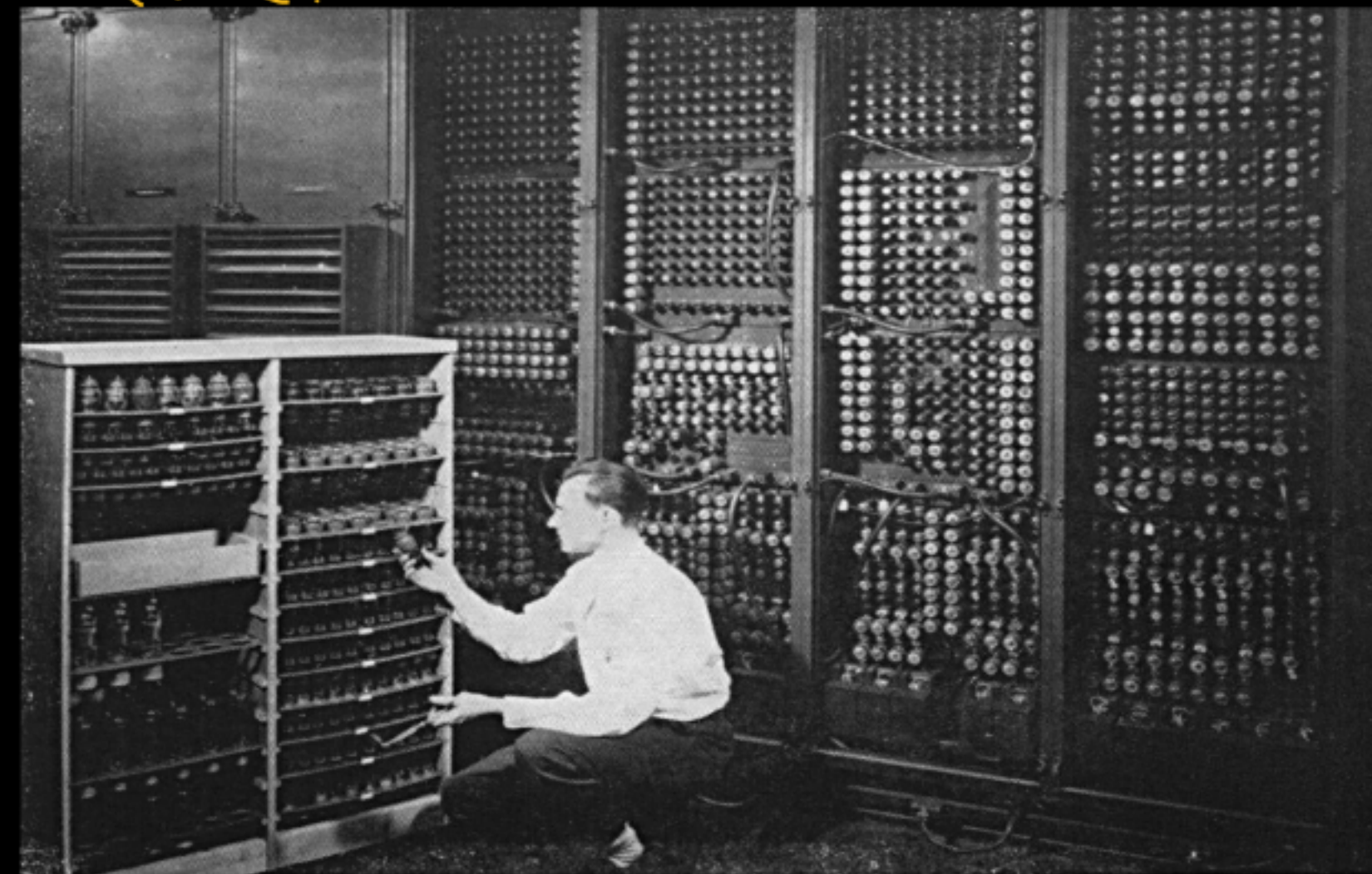
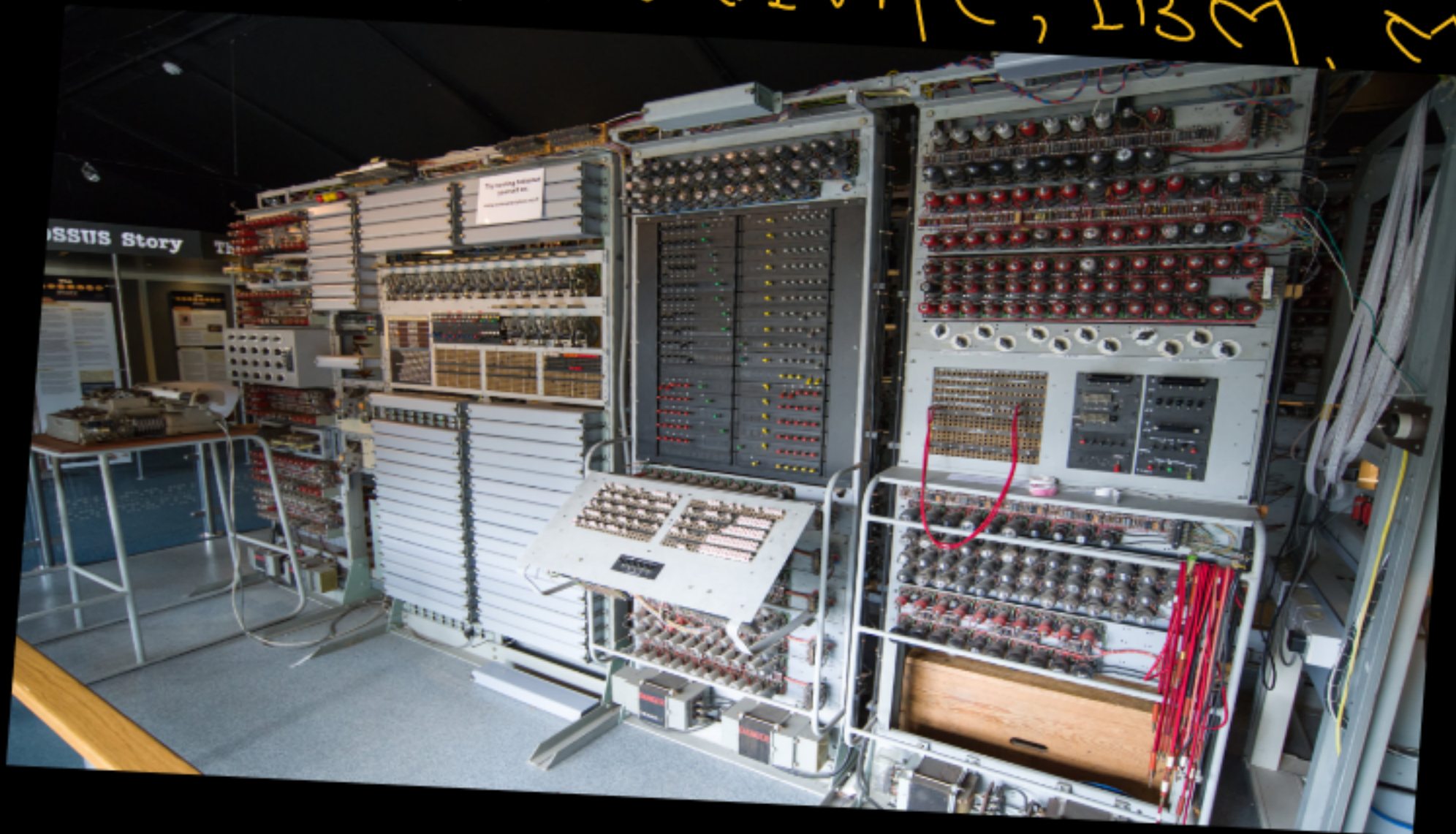
↳ अधिक ऊर्जा खपत more energy usage.

↳ कम भंडारण क्षमता एवं मंद गति
low storage capacity & slow speed.

↳ त्रुटि की संभावना ज्यादा → Chances of error ↑

↳ संचालन खर्चीला था। → Costly

↳ उदा. → ENIAC, UNIVAC, IBM, MARK-1.



↳ 1952 → Assembly language → Dr. Grace Hopper
↓
Program likhna aasan hua |

2) 2nd Generation Computer. (1955-64)

↳ 3rd યોગ → Transistors → કમ વિદ્યુત સ્વર્ચ

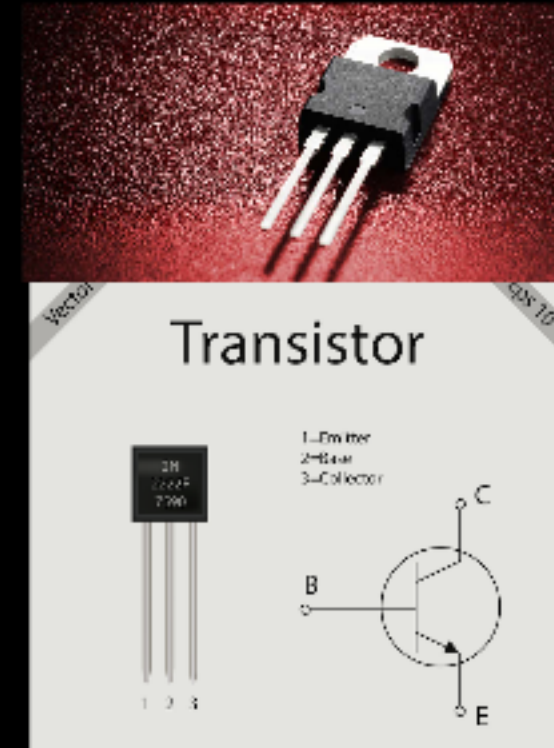
↳ Software → 3rd સ્તરીય અસેમ્બલી ભાષા
High level assembly language.

↳ Storage → Magnetic storage device
Magnetic tape, magnetic disc.

ગોડાઈટ કામતા ↑
ગતિ ↑

↳ Speed → micro-seconds (μs)

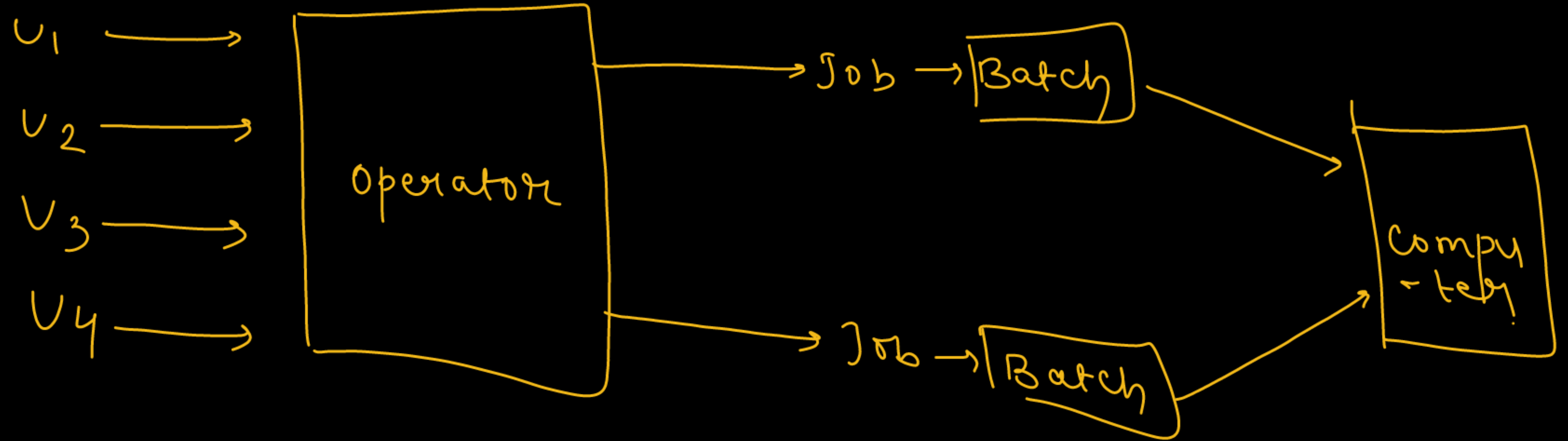
$$1 \mu s = 10^{-6} \text{ sec}$$



$$\frac{1}{1000000}$$

↳ પ્રયોગ — વ્યવસાય एवं રૂઢીગટ

↳ operating s/y → Batch OS



↳ Software → (COBOL) FORTRAN



'mnemonics'

ADD

OPCODE → operational code

High level language

↓
Compiler

IBM

→ Programming → easy.

Transistor → 1947 → Bell Laboratories.

John Bardeen, William Shockley
Walter Brattain.

Semiconductors: Silicon (Si), Germanium (Ge)

3610 → IBM 1401, UNIVAC