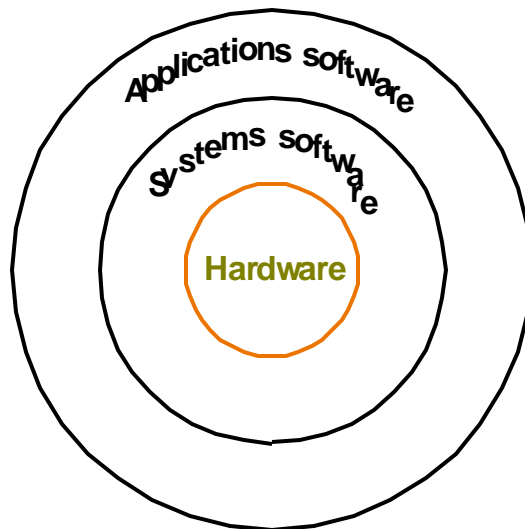


1. TECNOLOGIAS

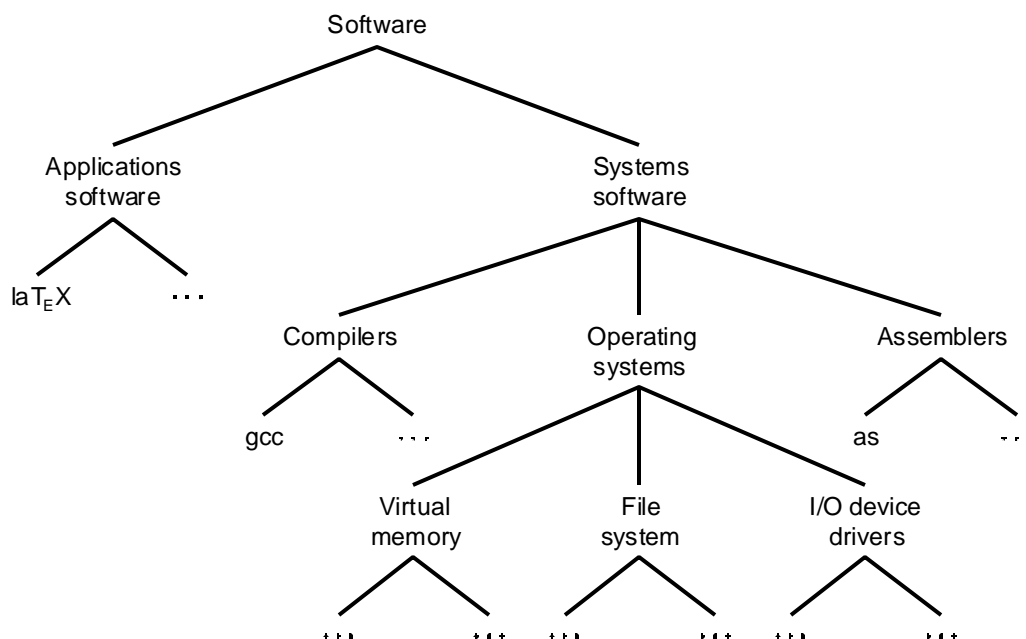
- **Introdução**
 - **Revoluções**
 - **Agricultura**
 - **Industrial**
 - **Informação (em andamento)**
 - **Ficção científica do passado que hoje já são realidade graças aos avanços tecnológicos (HW & SW)**
 - **Automatic Teller Machine – ATM**
 - **Computadores em automóveis**
 - **Laptops**
 - **Projeto Genoma Humano**
 - **World Wide Web – www**

- **Software**

- **Modelo simplificado da hierarquia hardware/software**



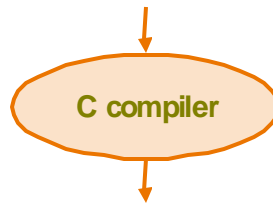
- **Sistema Computacional - Software**



- **Processo de tradução de um programa**

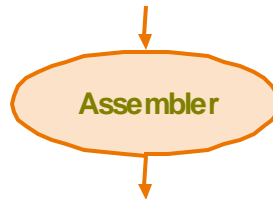
**High-level
language
program
(in C)**

```
swap(int v[], int k)
{int temp;
  temp = v[k];
  v[k] = v[k+1];
  v[k+1] = temp;
}
```



**Assembly
language
program
(for MIPS)**

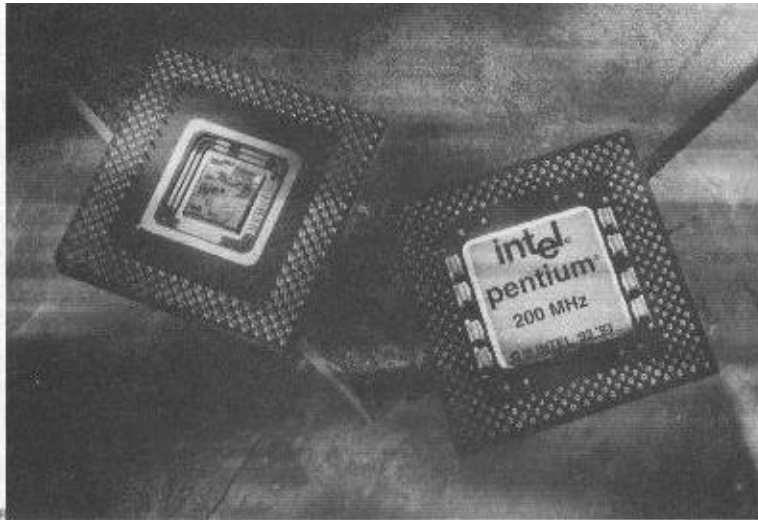
```
swap:
  muli $2, $5, 4
  add $2, $4, $2
  lw $15, 0($2)
  lw $16, 4($2)
  sw $16, 0($2)
  sw $15, 4($2)
  jr $31
```



**Binary machine
language
program
(for MIPS)**

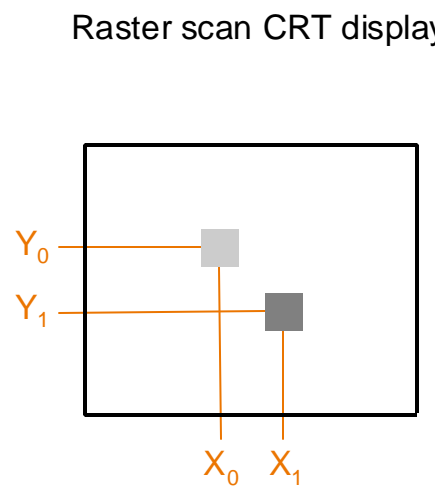
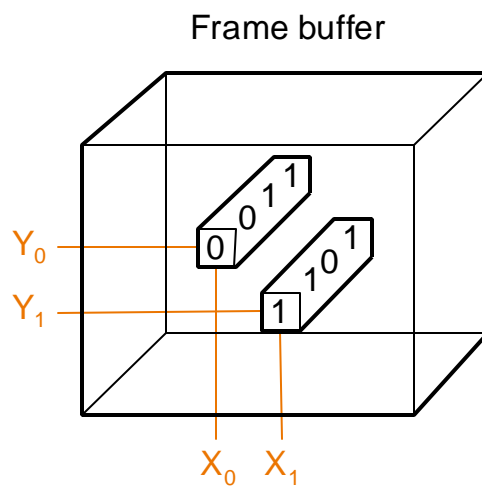
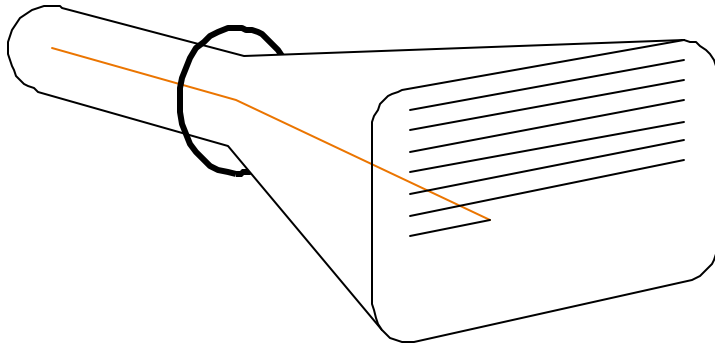
```
0000000010100001000000000011000
00000000100011100001100000100001
10001100011000100000000000000000
10001100111100100000000000000100
10101100111100100000000000000000
10101100011000100000000000000100
00000011111000000000000000001000
```

- **Hardware**
- **Dentro de um PC**

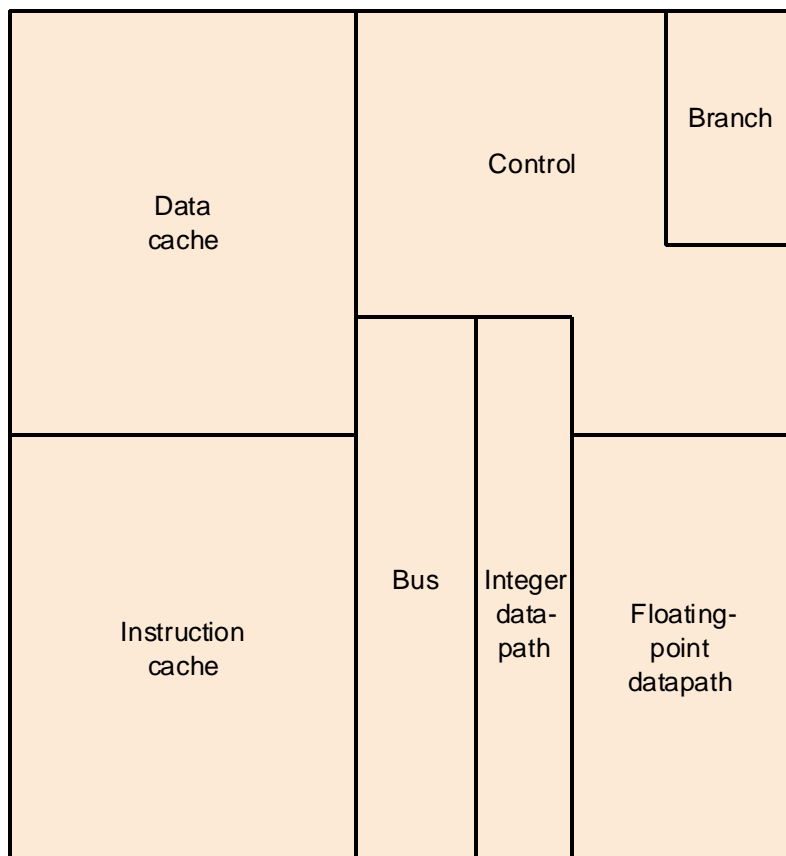


Periféricos

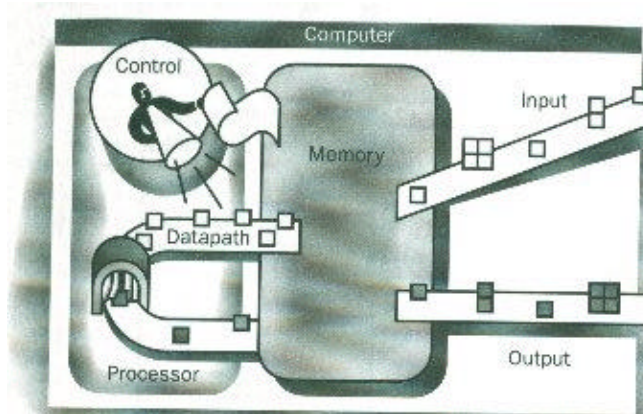
- **Mouse**
- **Teclado**
- **Vídeo**



- **Processador INTEL Pentium – 91 mm² e 3.3 milhões de transistores (cache – 1 milhão de transistores)**



- **Organização de um computador**



- **Processador**

- **Controle**
- **Datapath**

- **Memória**

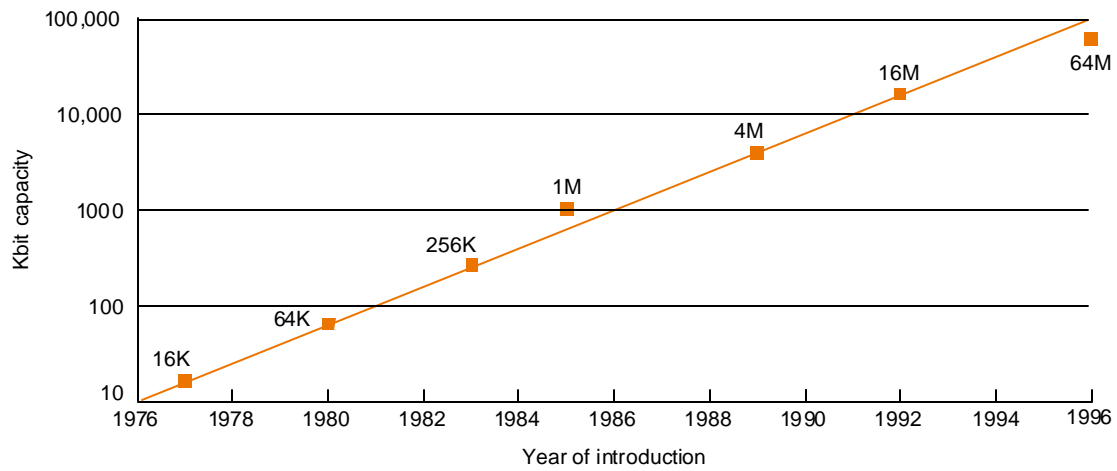
- **Entrada**

- **Saída**

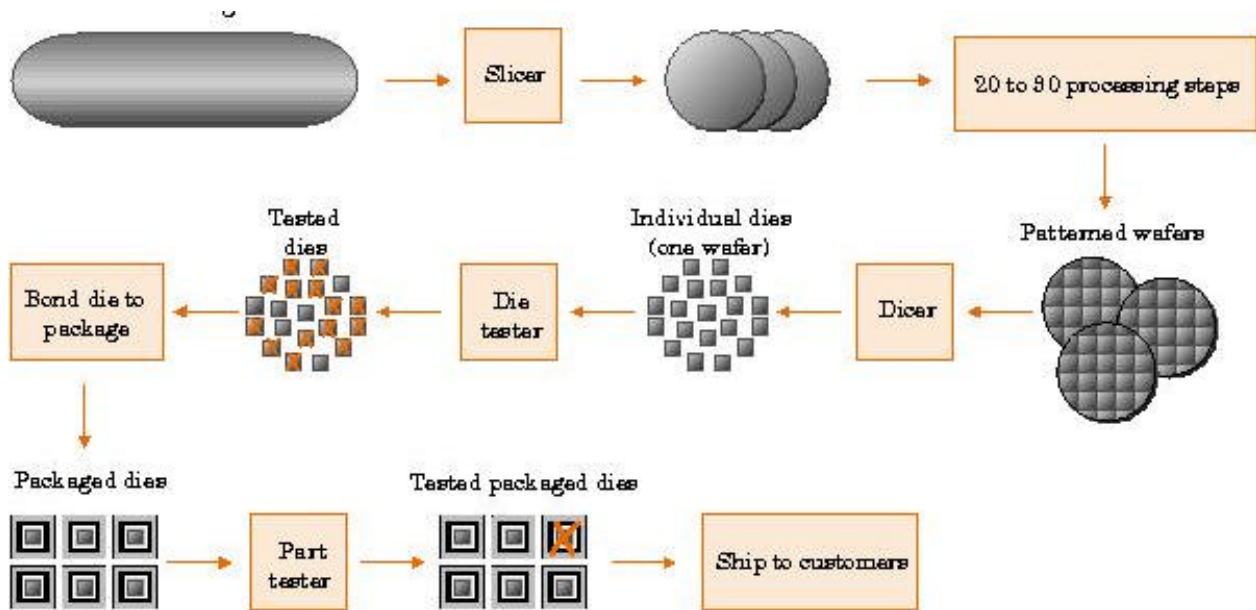
- **Circuitos Integrados**

Ano	Tecnologia usada nos computadores	Relação Desempenho/Custo
1951	Válvula	1
1965	Transistor	35
1975	Circuito Integrado	900
1995	VLSI	2.400.000

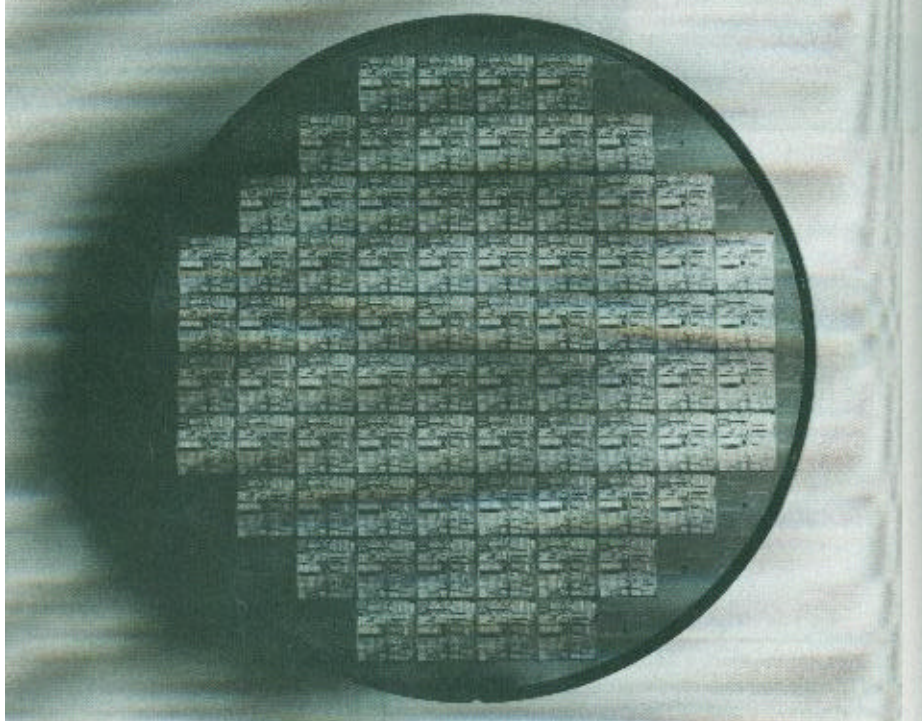
- **Capacidade da Memória X Anos**



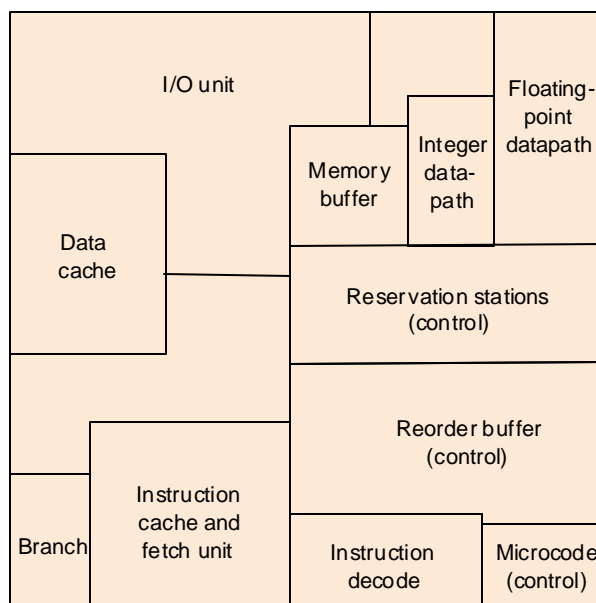
- **Processo de Fabricação de circuitos integrados**



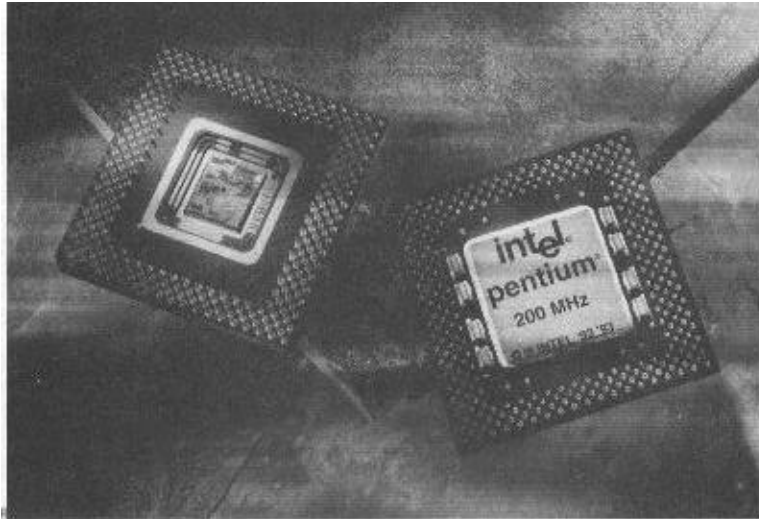
- **Wafer Intel Pentium – Pro**



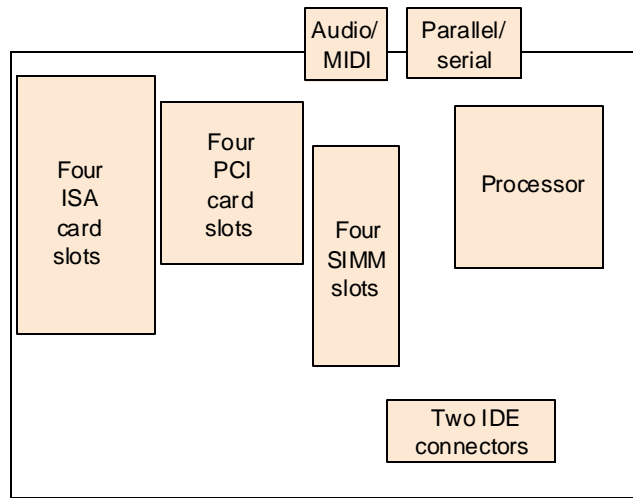
- **Pentium Pro – 306 mm² e 5.5 milhões de transistores**



- **Encapsulamento Pentium e Pentium Pro**



- **Placa mãe - PC**



- **Evolução do desempenho**

