

Sistemas Operacionais

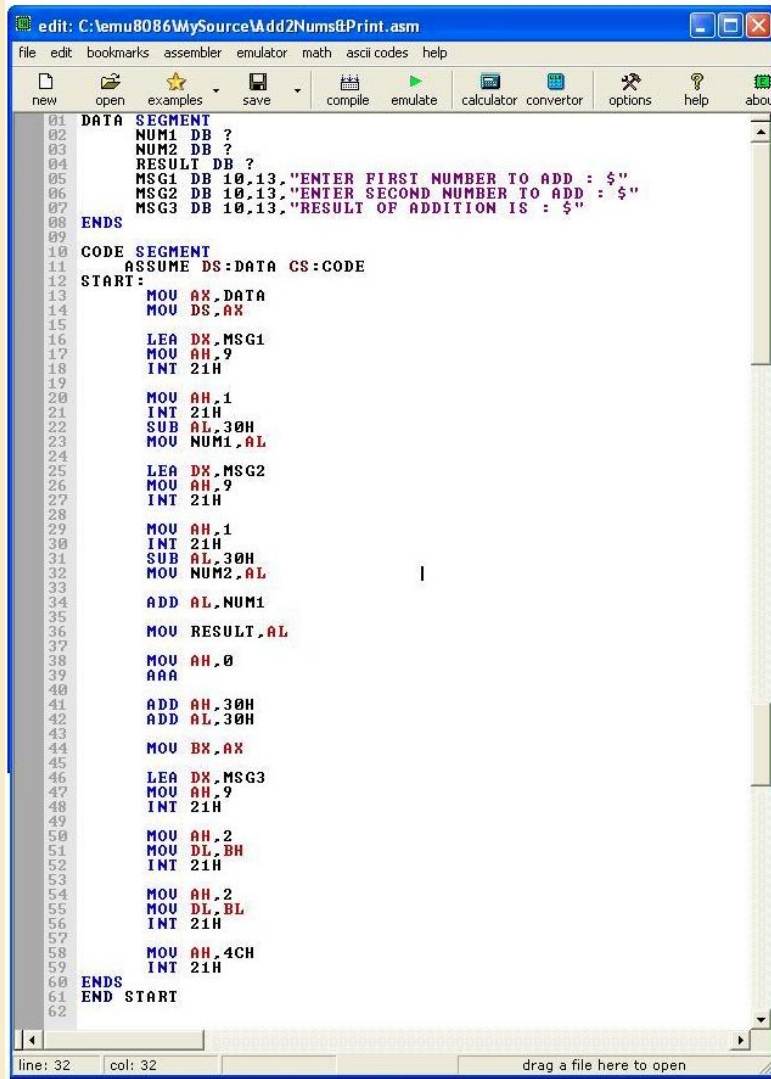
Conceitos e Histórico

Profa: Deborah Magalhães



Código Assembly p/ somar 2 números

[Link](#)



The screenshot shows a text-based assembly editor window. The title bar reads 'edit: C:\emu8086\MySource\Add2Nums&Print.asm'. The menu bar includes 'file', 'edit', 'bookmarks', 'assembler', 'emulator', 'math', 'ascii codes', and 'help'. The toolbar contains icons for 'new', 'open', 'examples', 'save', 'compile', 'emulate', 'calculator', 'converter', 'options', 'help', and 'about'. The main text area displays assembly code for an x86 program. The code is organized into two segments: a 'DATA SEGMENT' and a 'CODE SEGMENT'. The 'DATA SEGMENT' defines variables 'NUM1', 'NUM2', and 'RESULT' as double bytes, and three message strings 'MSG1', 'MSG2', and 'MSG3'. The 'CODE SEGMENT' starts with 'ASSUME DS:DATA CS:CODE' and 'START:'. It then performs the following steps: 1. Initialize 'DS' to 'DATA'. 2. Load 'MSG1' into 'DX' and interrupt 21h. 3. Read the first number into 'AH', subtract 30h, and store it in 'NUM1'. 4. Load 'MSG2' into 'DX' and interrupt 21h. 5. Read the second number into 'AH', subtract 30h, and store it in 'NUM2'. 6. Add 'NUM1' to 'AL'. 7. Store the result in 'RESULT'. 8. Clear 'AH' and perform an AAA instruction. 9. Add 30h to 'AH' and 'AL'. 10. Store the final result in 'BX'. 11. Load 'MSG3' into 'DX' and interrupt 21h. 12. Read the result from 'BX' into 'AH' and 'DL', subtract 30h from 'DL', and interrupt 21h. 13. Clear 'AH' and set 'CH' to 4, then interrupt 21h. The code ends with 'ENDS' and 'END START'. The status bar at the bottom shows 'line: 32 col: 32' and a prompt 'drag a file here to open'.

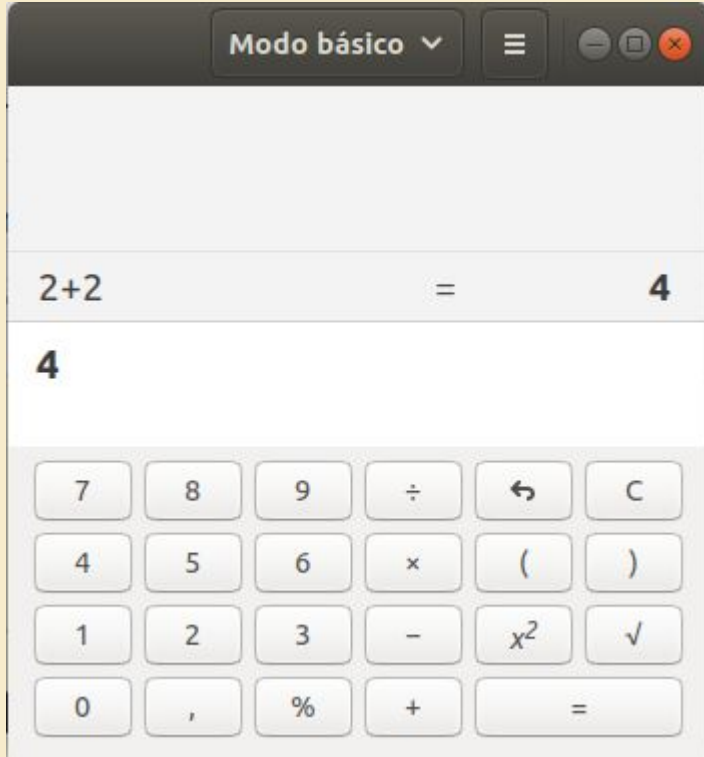
```
edit: C:\emu8086\MySource\Add2Nums&Print.asm
file edit bookmarks assembler emulator math ascii codes help

new open examples save compile emulate calculator converter options help about

01 DATA SEGMENT
02     NUM1 DB ?
03     NUM2 DB ?
04     RESULT DB ?
05     MSG1 DB 10,13,"ENTER FIRST NUMBER TO ADD : $"
06     MSG2 DB 10,13,"ENTER SECOND NUMBER TO ADD : $"
07     MSG3 DB 10,13,"RESULT OF ADDITION IS : $"
08
09 ENDS
10
11 CODE SEGMENT
12     ASSUME DS:DATA CS:CODE
13     START:
14         MOV AX,DATA
15         MOV DS,AX
16
17         LEA DX,MSG1
18         MOV AH,9
19         INT 21H
20
21         MOV AH,1
22         INT 21H
23         SUB AL,30H
24         MOV NUM1,AL
25
26         LEA DX,MSG2
27         MOV AH,9
28         INT 21H
29
30         MOV AH,1
31         INT 21H
32         SUB AL,30H
33         MOV NUM2,AL
34
35         ADD AL,NUM1
36         MOV RESULT,AL
37
38         MOV AH,0
39         AAA
40
41         ADD AH,30H
42         ADD AL,30H
43
44         MOV BX,AX
45
46         LEA DX,MSG3
47         MOV AH,9
48         INT 21H
49
50         MOV AH,2
51         MOV DL,BX
52         INT 21H
53
54         MOV AH,2
55         MOV DL,BL
56         INT 21H
57
58         MOV AH,4CH
59         INT 21H
60     ENDS
61     END START
62
```

line: 32 col: 32 drag a file here to open

Aplicação



Terminal

```
(base) deborah@deborah-Inspiron-7472:~$ echo $((2+2))  
4  
(base) deborah@deborah-Inspiron-7472:~$
```

```
(base) deborah@deborah-Inspiron-7472:~$ python  
Python 3.8.3 (default, Jul 2 2020, 16:21:59)  
[GCC 7.3.0] :: Anaconda, Inc. on linux  
Type "help", "copyright", "credits" or "license" for more information.  
>>> 2+2  
4  
>>>
```

Qual a finalidade do sistema operacional?

#1

*Máquina estendida: oferecer
abstrações que possam esconder
a complexidade do hardware*

#2

*Gerenciar os recursos de
hardware de maneira **eficiente***

Revisão do Hardware

FIGURA 1.6 Alguns dos componentes de um computador pessoal simples.

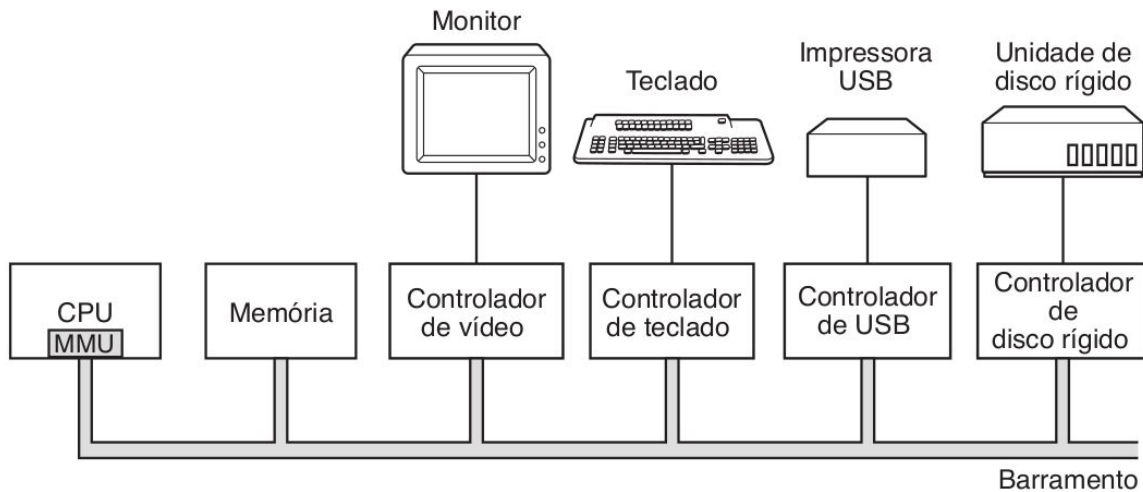
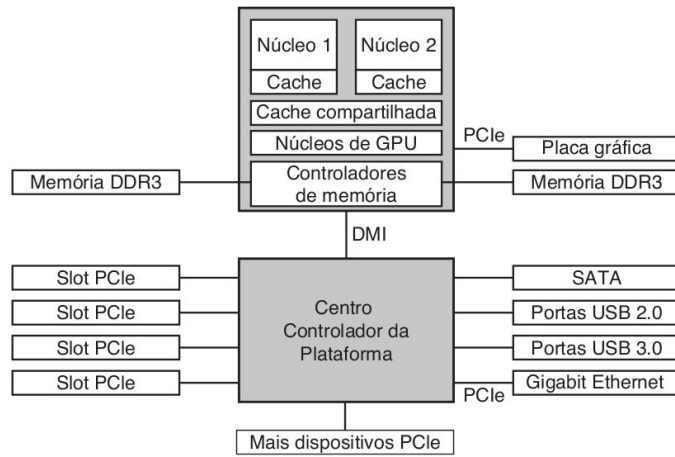
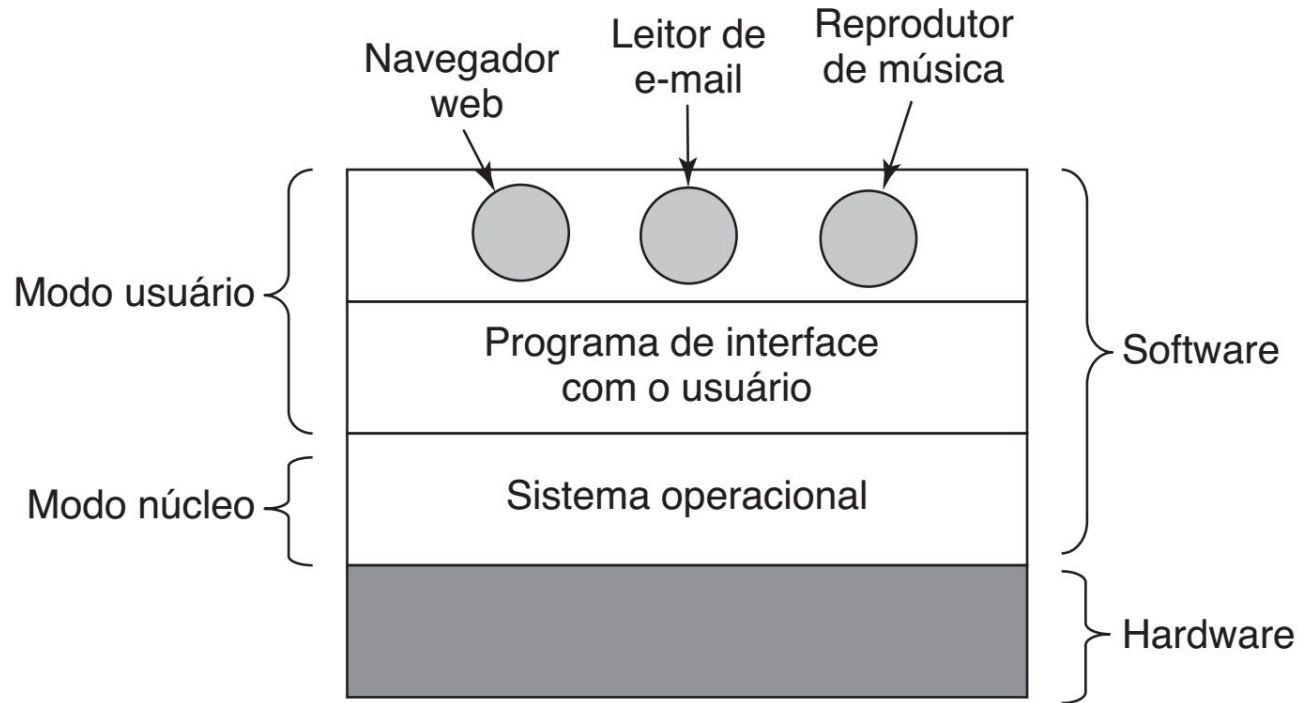


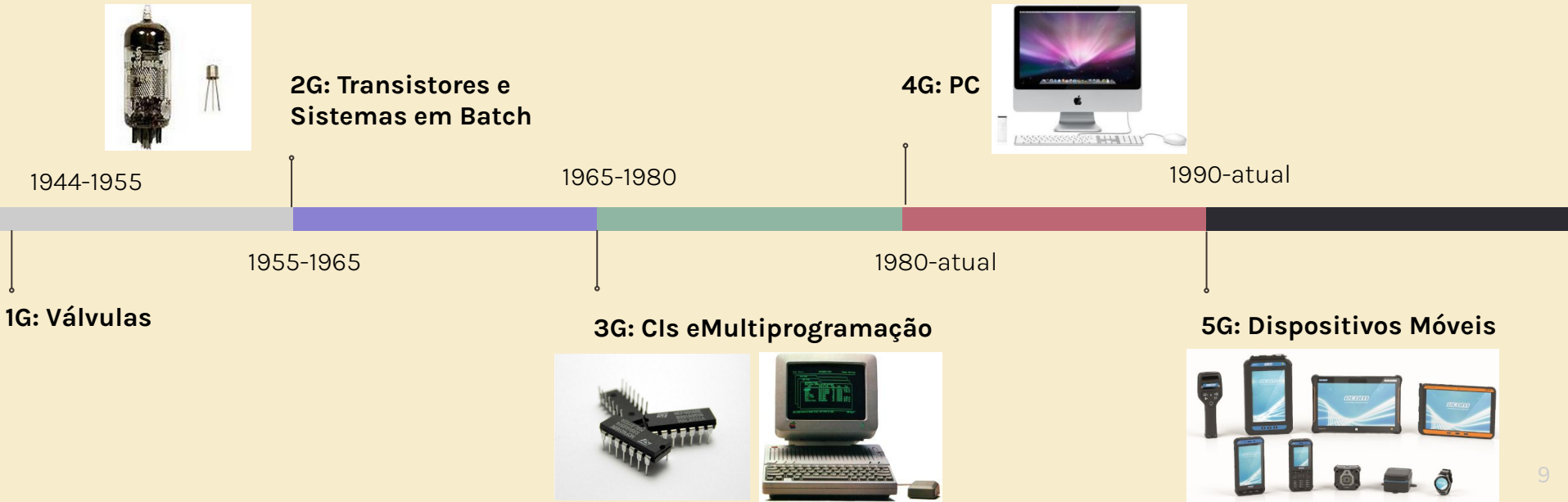
FIGURA 1.12 A estrutura de um sistema x86 grande.



Onde está o SO?



Histórico



Zoológico de Sistemas Operacionais

SOs p/ Mainframes

- Atendem a milhares de usuários
- Capacidade de processar um grande volume de dados em pouco tempo
- Exemplo de aplicação: comércio eletrônico em larga escala
- Não possibilita instalar apps de terceiros



SOs p/ Portáteis

- É um sistema sofisticado capaz de gerenciar mobilidade, tamanho do dispositivo, número de sensores, bateria
- **Android (Google), iOS (Apple), ~~Windows OS (Microsoft)~~**
- Permite instalar apps de terceiros



SOs p/ Embarcados

- Automação: industrial, residencial, agrícola
- Apresenta interface com o usuário limitada
- Executa uma aplicação única
- Não dá suporte a instalação de softwares de terceiros





Muito Obrigada!

Se você tiver qualquer dúvida ou sugestão:

- deborah.vm@ufpi.edu.br

