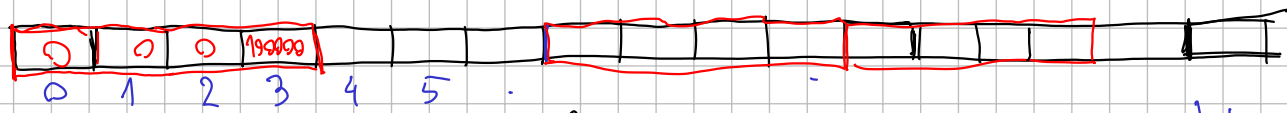
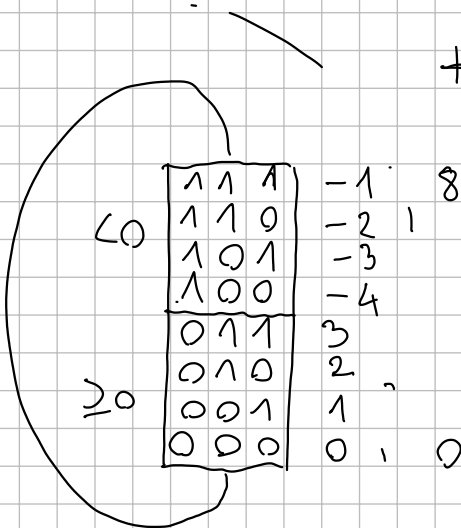


MSB - LSB  
 10000 - 100  
 big endian  
 little endian  
 $0 \dots 2^{32} - 1$

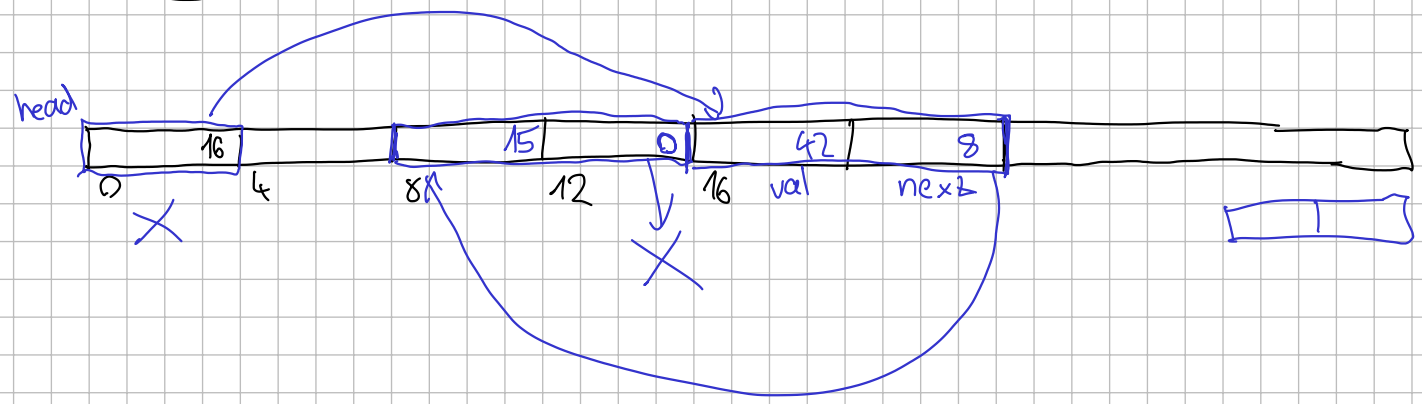


Dvojkový doplněk  
 ASCII  
 A 65  
 alokace

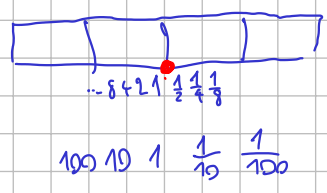
int a[10];



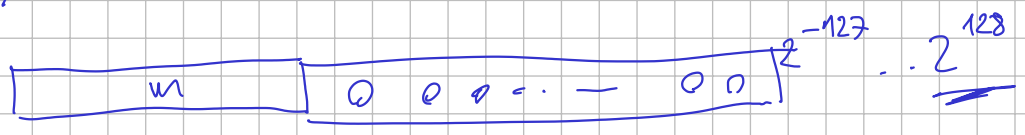
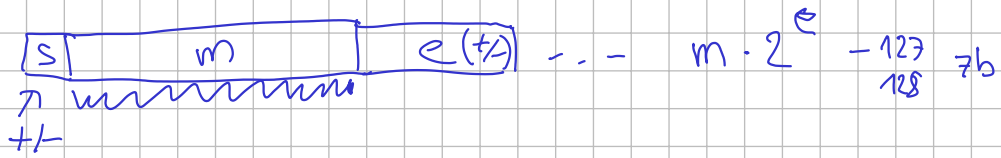
+ , -  
 $-2^{31} \dots 2^{31} - 1$

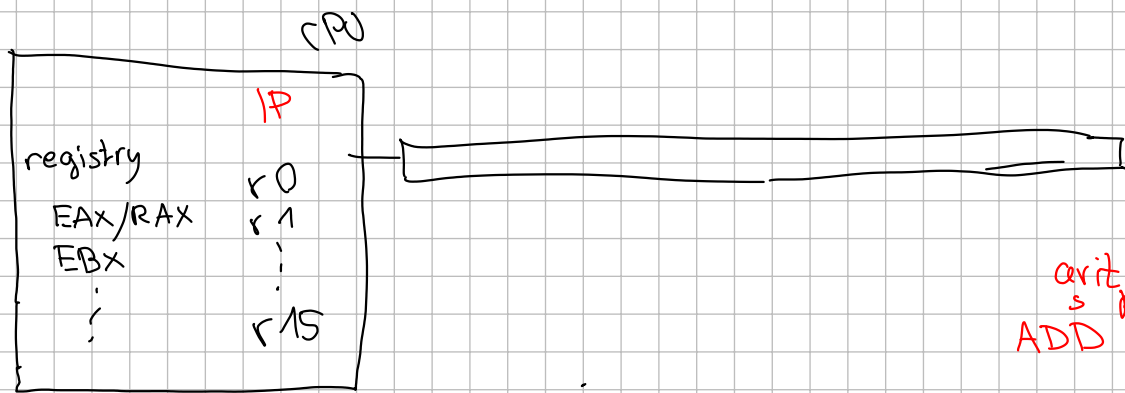


desetinná čísla  
 fix point  
 float



$(0.11)_2$   
 $= \frac{1}{2} + \frac{1}{4} = \frac{3}{4}$





arit. práci přímá s RAM (x86)  
 ADD r1, [4000]  
 X  
 load/store arch. (ARM)

### Instrukce

- aritmetické ... +, -, \*, /, &, |, ~, ^ pouze registry

ADD r5, r15, r4      $r5 \leftarrow r15 + r4$   
 $>, <, =, \neq$       $r1 < r2 > r3$

- load/store

LOAD<sub>32</sub> r1, 3004      $r1 \leftarrow$    
 STORE<sub>32</sub> r1, 1000

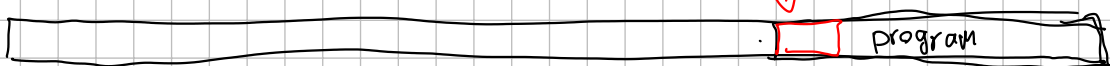
neprímé adresování

LOAD<sub>32</sub> r1, [r5]      $r1 \leftarrow$

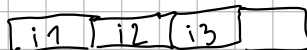
- skoky / nepodmíněné / podmíněné

JUMP 1234  
 JEQ

assembler



10000



instrukce - pevná délka (ARM) 32b.  
 prom. délka (x86/PC)

CMP r1, r2

JNEQ 2000

1000

then

2000

else

while (r1 != r2)

Smyčka:

1000 - CMP r1, r2  
 JEQ 2000

tělo

JMP 1000 smyčka

2000

interpret

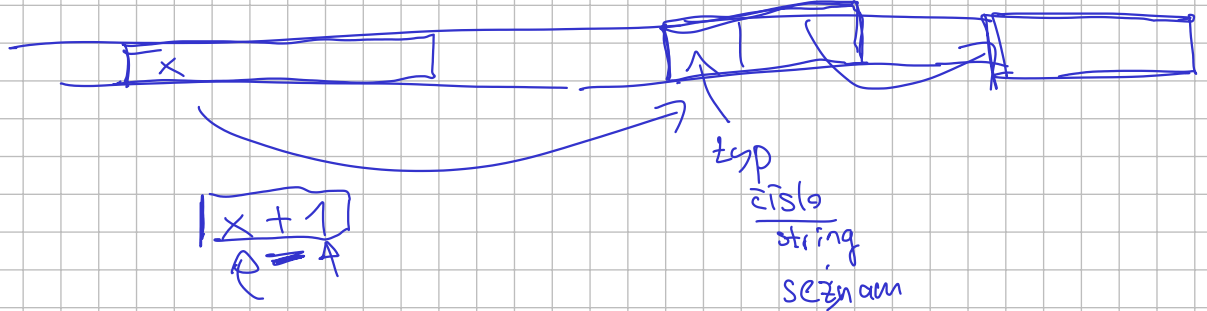
IP



proměnná

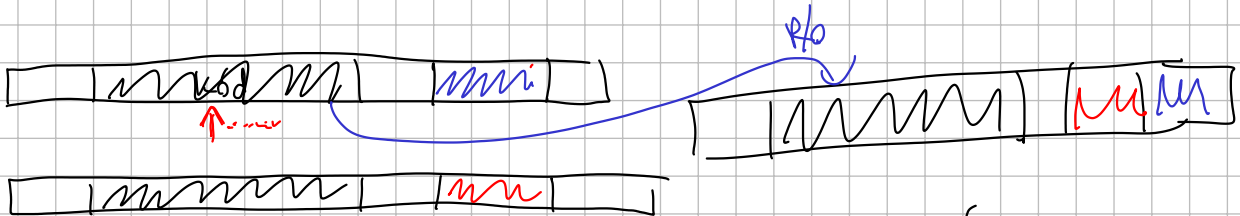
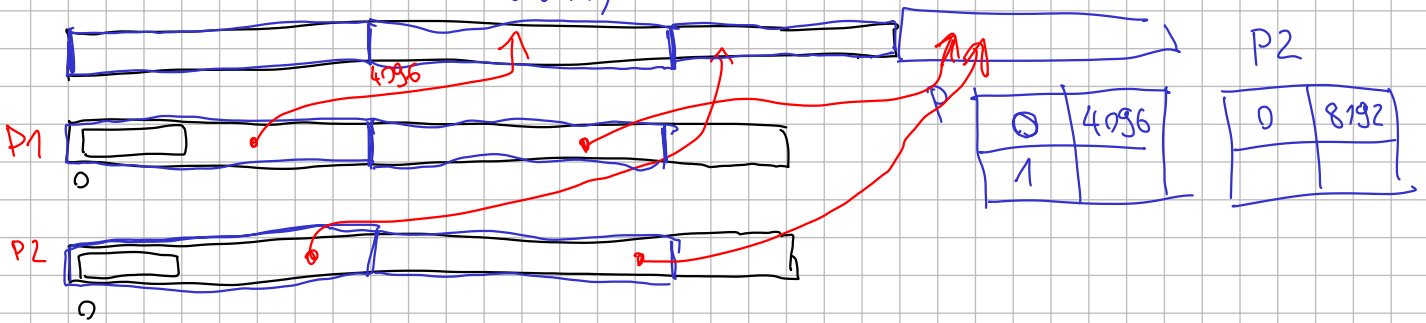
byte kód

Object



Virtuální paměť

stránky... 4kB



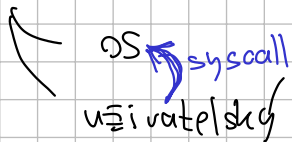
context switch

- registry
- stránk. tabulky
- IP

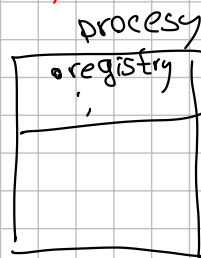
prerušeni

- od zařízení
- časovače

Módy procesoru (ring)



- x měnit st. tab.
- x přístup k HW



printf("Hello World\n");

