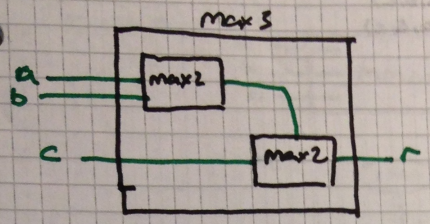
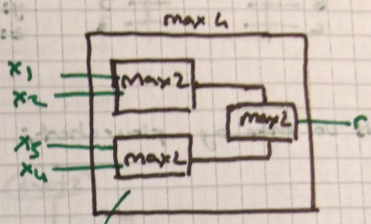
21/09/2015

What about max 3 ?



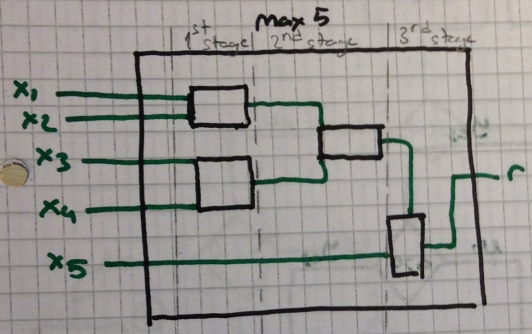


how: implementation

abstraction = what?

↳ what does it do?

↳ forget about the details



→ How many max 2 do we need?

"n-1"

Functions:

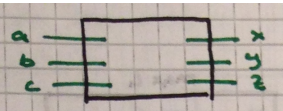
ceiling $\lceil\ \rceil$ $\lceil m \rceil$ = min integer num. $\geq m$

floor $\lfloor\ \rfloor$ $\lfloor m \rfloor$ = max integer number $\leq m$

$\lceil 0.5 \rceil = 1$ $\lceil 1.5 \rceil = 2$ $\lfloor 1.5 \rfloor = 1$

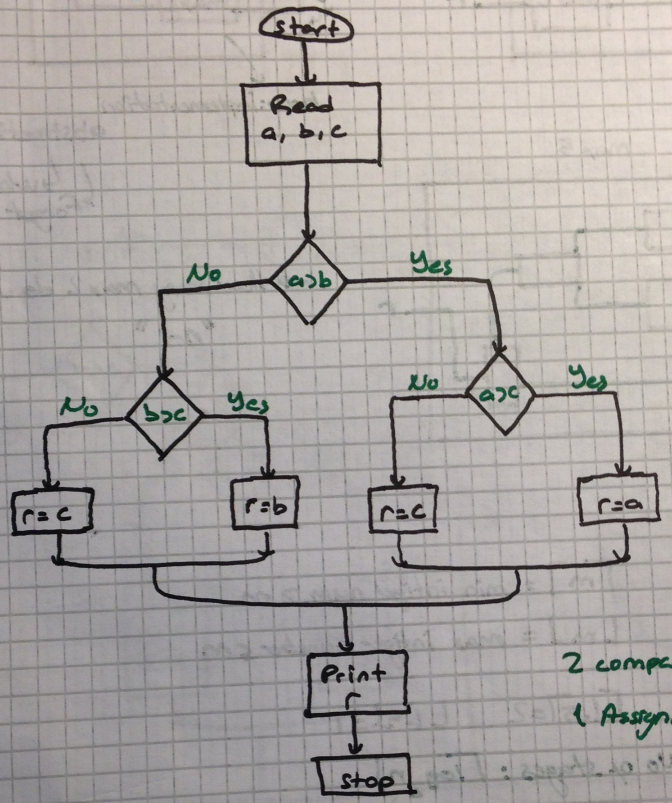
No of stages : $\lceil \log_2 n \rceil$

for ex: $\log_2 5 = \lceil \log_2 5 \cdots \rceil = 3$



x: max(a,b,c)
y: mid (a,b,c)
z: min(a,b,c)

→ Lets do max by flowchart;

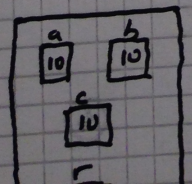


2 comparision
1 Assignment

→ Note that if you do min you can switch either Yes and NO's or the sign ">" to "<"

int a, b, c, r;
(variables)

at the main memory



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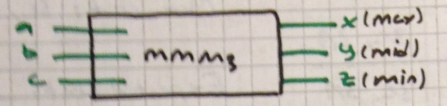
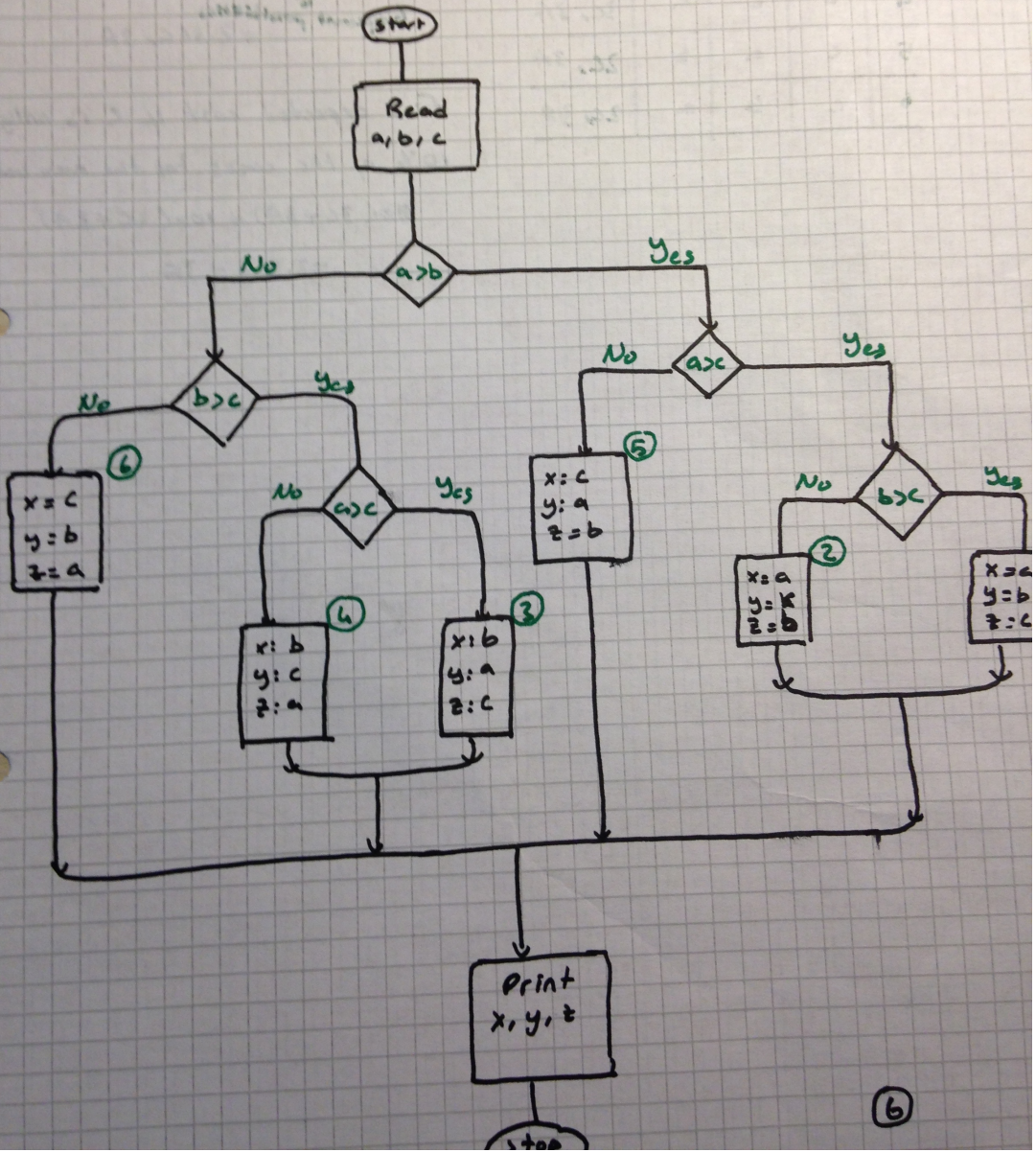
→ Lets do the mid:

Remember:





Case	Max	Mid	Min	Cost
1	a	b	c	3C, 3A
2	a	c	b	3C, 3A
3	b	a	c	3C, 3A
4	b	c	a	3C, 3A
5	c	a	b	2C, 3A
6	c	b	a	2C, 3A

Min cost: 2C, 3A

Max cost: 3C, 3A

Expected cost: $\frac{16}{6}$ C, 3A

6 different possibilities

$= 2.66$C, 3A

Find expected cost if C is only 10% of the cases has the max value:

$90\%(3C+3A) + 10\%(2C+3A)$

$= 2.9C + 3A$