

On my honor, I pledge that I have neither given nor received any unauthorized assistance on this exam. I give permission that my camera recordings will be taken for identification purposes for BSM 301 exam and I understand that these recordings will not be used for any other purposes

1) a)

male (bob).	parent (bob, david).
male (david).	parent (bob, john).
male (john).	parent (bob, emily).
	parent (bob, mary).
female (ann).	parent (ann, david).
female (emily).	parent (ann, john).
female (mary).	parent (ann, emily).
	parent (ann, mary).

b) $\text{brother}(X, B) :- \text{male}(B), \text{parent}(P, X), \text{parent}(P, B).$
 $\text{mother}(M, X) :- \text{female}(M), \text{parent}(M, X).$

c) Whose mother is same with David's?

?- $\text{mother}(M, X), \text{mother}(M, \text{david}).$

Does Mary have a brother?

?- $\text{brother}(\text{mary}, X).$

2- a) $X = q(f) \quad Y = r(q(f))$

b) 'No

3- (define (listmin lst)

(letrec (

(listmin-helper (lambda (lst minValue)

(if (null? lst)

minValue

(listmin-helper (cdr(lst)) (min minValue (car(lst))))

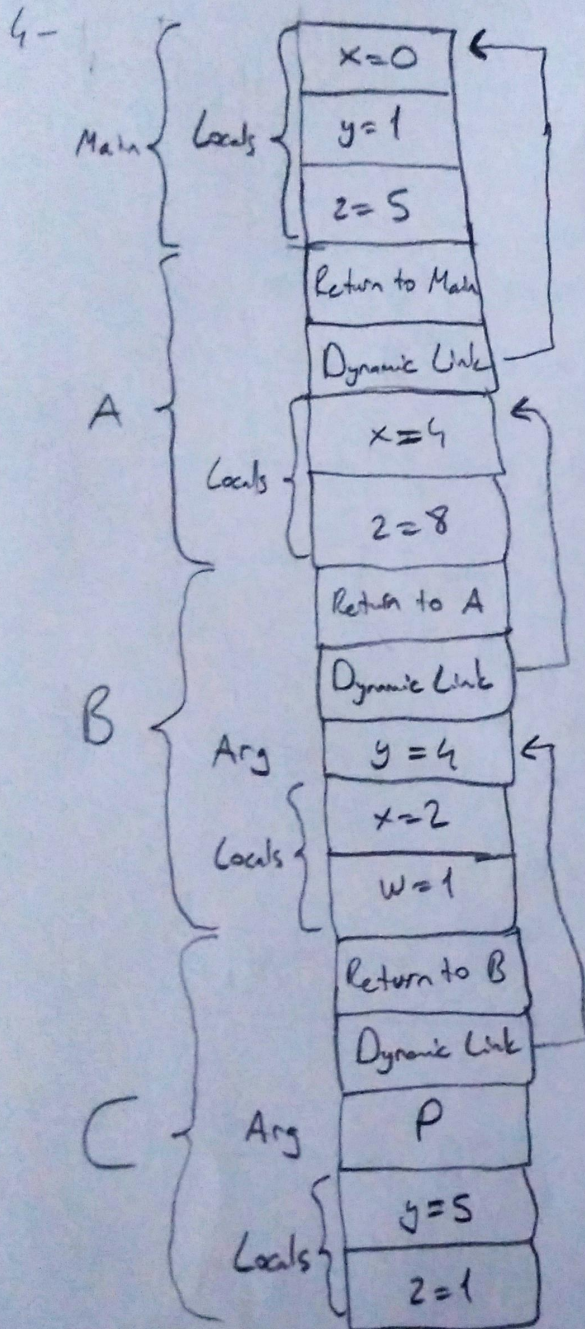
))

))

(listmin-helper lst +inf.0)

))

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B			
A	B	A	
Main	Main	Main	B
x	y	z	w

Shallow access stack is on right.
 I made a mistake and drew left stack.
 I didn't erase it.