

ECM2418

Computer Languages and Representations (A,
TERM1 2021/2)

Cover Sheet ID: 1064119

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Extension

N/A

Coursework: Functional and Logic Programming
Assignment

Submission Deadline: Tue 4th Jan 2022 12:00

Personal tutor: Dr Sareh Rowlands

Criterion 1:

Marker to enter criterion below

Question 1:

Well done, only when running: `exec [LOAD "v1", LOADI 1, ADD, STORE "v1", LOAD "v2", LOAD "v1", JMPGE (-7)] (0, fromList [("v1",0),("v2",10)], [0,10,0])`

we expected: `(7,fromList [("v1",11),("v2",10)], [0,10,0])`

but got: `(0,fromList [("v1",1),("v2",10)], [0,10,0])`

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Question 2:

Good work.

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Question 3:

Again well done, its just your plus case which does not always generalise correctly. Your command line execution is almost correct, however you should not have to enter the "Assign \"x\" (Plus (N 5) (N 3))" again.

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Question 4:

Well done on identifying the cases. The inductive case Plus a1 a2 should be generalised and not separated into where the arguments are V or N.

To verify the inductive case we need o identify the following lemma:

assumes (no JMP instruction in is1 and is2)

shows `exec (is1 ++ is2) (0,s,[]) =`

`let (pc, s', sck) = exec is1 (0, s, [])`

`(pc',s'',sck')= exec is2 (0, s', sck)`

`in (pc+pc', s'',sck')`

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Criterion 2:

Marker to enter criterion below

Criterion 3:

Marker to enter criterion below

General comments/How to improve:

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Second marker comments (where appropriate):

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Agreed mark:

83