

CmpE 260 - Principles of Programming Languages
Spring 2019
Assignment 2

due: 27.05.2019 - 11:59

Question 1 [50 points]

- a) Because of static scoping, the variable n in function *print_plus_n* and *increment_n* refers to local variable in main block, not global one.

Output

60
10
61

- b) Because of dynamic scoping, the variable n in function *print_plus_n* and *increment_n* refers to global variable n which is equal to 50.

Output

20
11
22

Question 2 [50 points]

- a) Pass-by-value is implemented with copy mechanism which means that the copy of the given variable as parameter is sent to subprogram. Therefore, variable x , y and z cannot be changed in the functions, their copies can only be changed.

Output

2,10,1500
2,10,1500
2,10,1500

- b) In this parameter passing technique, parameters are passed by reference, which means the actual variables are modified in subprograms. To do that, in fact, the addresses of the variables are sent to subprograms.

Output

2,10,1500

0,10,15

15,10,0

- c) If given parameters are primitive types, then pass-by-name is the same as pass-by-reference. In this case, parameters are primitive types.

Output

2,10,1500

0,10,15

15,10,0

Love, work, and knowledge are the wellsprings of our lives, they should also govern it.
(Wilhelm Reich)