

Programming Languages
Homework 7
Due Wednesday, February 26th at 2 AM

Download this homework assignment, and fill in your answers, then convert this document into pdf as a report to GradeScope. Be sure you know how to trace programs like this on paper; you will do it on the quiz and on the final.

1. [30] Consider the following procedure in Ada-like syntax (with 1-indexed arrays):

```
PROCEDURE Main IS
  i: integer := 3;
  type vector is array (1..3) of integer;
  a: vector := (3, 1, 2);
  PROCEDURE Put (v: vector) IS
  BEGIN
    Put_Line ("A = (");
    FOR i IN v'range LOOP
      Put_Line (v(i));
      Put_Line (" ");
    END LOOP;
    Put_Line (")");
  END Put;
  PROCEDURE Do_Something (t: mode integer) IS
  BEGIN
    i := i - 1;
    t := i + 1;
    a(t) := a(i) + 1;
    a(i) := a(t) + 1;
    i := i - 1;
    a(t) := t - 1;
    a(i) := a(t) - 1;
  END Do_Something;
BEGIN
  Do_Something(a(i));
  Put (a);
END Main;
```

What would be the output, assuming the parameter passing mode is pass by:

e.g. copy: value

A = (1 3 2)

a. reference

A = (0 1 2)

b. copy: value-result

A = (1 3 3)

c. name

A = (1 5 2)