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Question 1 (Play Around with Array/Pointer Arguments)

Make a new directory called `Assignment4` in your `ppl` repo. Make a new directory called `Assignment4/Question1` that will contain your source code and executables for this question. Complete *Play Around with Array/Pointer Arguments* (Expert C Programming p. 249):

1. Implement 1 in a function called `one` that `main` calls in a file called `play.c`. Make `ca` local to `main`. Record your answer to 1 here:

0x7fff9947ef28
0x7fff9947ef56
0x7fff9947ef57

2. Implement 2 in a function called `two` that `main` calls in `play.c`. Make `pa` local to `main`. Record your answer to 2 here:

0x7fff9947ef28
(nil)
0x1
0x1

3. Implement 3 in `main` (which calls `one(ga)` and `two(ga)`) in `play.c`. Record your answer to 3 here:

one(ga) output:
0x7fff9947ef28
0x55e1d2b4b010
0x55e1d2b4b011

two(ga) output:
0x7fff9947ef28
0x55e1d2b4b010
0x55e1d2b4b011
0x55e1d2b4b011

COMPARISON: the outputs are identical. The local variable form of `ga` could be stored in different locations between function calls `one()` and `two()`, but due to stack memory optimization the address is the same because once one function is done with the space the other function claims it. Function `two` also prints `++ga` while `one` does not, but this expression is identical to `&(ga[1])` as they both display the address of the byte after the pointer.

4. Implement 4 in `main` in `play.c`. Record your answer to 4 here:
0x55e1d2b4b010

0x55e1d2b4b010

0x55e1d2b4b011

5. Record your answer to 5 here:

EXPECTATION: I expect all the outputs of `one()` to be unique for both inputs `ca` and `ga` because the address of the array is a pointer stored separately from the array contents and the array contents for indices 0 and 1 will both have defined memory locations. The `two()` function, however, will have identical values for `&(pa[1])` and `++pa` because these two forms have the same meaning.

OUTCOME: the results of each problem are shown in the above parts (1-4). My expectations where all correct except for two things. First, I should have mentioned that `&(pa[0])` would print `(nil)` because that space in memory is reserved for the value `pa` points to, but since the variable was only defined and not initialized there is no value there. Second, the printed value of `&ga` is different when called in a function locally vs when called in `main()` because when `ga` is passed into a function the new local variable is a pointer to `ga`.

Continue to use branching to get more practice.