

Programming Design, Spring 2016

Suggested Solution for Homework 4

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Problem 1

- (a) The output of the first `cout` will be 135, since the value of the variable will not change when `char` is cast into `int`.
- (b) The output of the second `cout` will be -8 . When 254 is assigned to variable `c`, an overflow will occur and the value of `c` will become -2 .
- (c) The length of `array` is not declared with a constant. This may result in a syntax error in some compilers. What we should do is to use a constant in the declaration of `array`.
- (d) If you submit the modified program to PDOGS, an error will occur:

`error: variable-sized object may not be initialized.`

This is of course because the length of `array` should be a constant. If you use some other compilers, you probably get no compilation error. However, if you try, e.g.,

```
#include <iostream>
using namespace std;

int main()
{
    int a = 1;
    int array[a] = {1, 2, 3}; // (c)

    return 0;
}
```

Once we compile and execute it, we will get a run time error for sure.

Problem 2

Please see the attached CPP file.

Problem 3

Please see the attached CPP file.

Problem 4(bonus)

Please see the attached CPP file.