

# Homework 8

**Due: April 5, 11 PM**

Homework assignments must be done individually. Collaboration on homework assignments is *not* allowed.

## Questions

Assume we have a language that allows arrays. The parameters in this language can be passed by value, by reference, by value-result, or by name. Consider the following program:

```
int A[4];
int k;

void f( int x, int y ) {
    x = x + 2;
    k = k + 1;
    A[k] = A[k] * 2;
    y = y - 1;
    cout << x;
    cout << y;
    cout << k;
    cout << A[k];
}

void main() {
    k = 0;
    while (k < 4) {
        A[k] = k - 1;
        k = k + 1;
    }
    k = 0;
    f(k, A[k]);
    cout << k;
    cout << A[3];
    cout << A[2];
    cout << A[1];
    cout << A[0];
}
```

Below is a link to a file that contain six pictures. The first four pictures contain outlines of f's activation record, as well as the space in the static data area for globals k and A. The last two pictures contain space for recording the output of the program.

You are to print the file and complete the pictures:

- For the first four pictures, you should fill in the values for all of the variables as they would be just before function f returns. For each picture, assume the parameter-passing modes for f's parameters indicated in that picture.
- For the last two pictures, you should fill in the values that would be printed by functions f and main, assuming that f's parameters are both passed by value-result or both passed by name (as indicated in the pictures).

[Link to pdf file](#)

## Handing in

Submit the completed figure as a PDF on Learn@UW.