

## CSI 32 Extra credit assignment – part 3 (7 points)

Topics:

- dynamic memory allocation,
- references
- pointers

1. (2 pts) Give an example of a memory leak (as a code fragment):

2. (2 pts) Give pictorial representation of the memory for the following code fragment:  
(show all the work, from the very first line of code till the very last one, do it as one picture)

```
char c1 = 'a', c2 = 'd';  
int a = 75, b = 105;  
char* cp = &c1;  
*cp = 'g';  
c2 = a;  
b = c1;
```

3. (3 pts) Define three functions with name that find the sum of squares of three floating point values, that are supplied as parameters, and returns the result by value;

- The first function takes those parameters by value, and is called `sumOfSquares()`
- the second function takes those parameters by reference, but their modification is prohibited, and is called `sumOfSquaresRef()`
- the third function takes those parameters by pointers, but their modification is prohibited, and is called `sumOfSquaresP()`

Here is an example of the first function call:

```
float x = 9.8, y = 1.2, z{2.3}, result;  
result = sumOfSquares(x,y,z);
```

Supply your code with some testing!

**#1 and #3 are to be sent via email.**

**#2 you can either bring to class on Tuesday, April 18<sup>th</sup> or send the picture of it to me along with all your other extra credit work via email by Tuesday, April 18<sup>th</sup>, 11:59pm.**