1 Administrative Topics

- Remember that this week’s project is not due until Friday night. Come to lab for extra help!
- We will be sending out grades for Project 4 on Wednesday, hopefully.
- Stephanie has a conference in S.C. on Friday (assuming they have recovered from Hurricane Matthew), so Dale will be coming in to go over the HW and give the quiz.

2 Optimization

We continued our discussion of optimization and we learned about how to use function pointers to make all-purpose optimization functions.

Here is the code we wrote in class:

```python
import math

def f(x):
    return x**x

def c(x):
    return f(x) - 2.0

# Use a simple linear search to find the value of the objective function closest to zero. It returns that value.
```
# The objective function is a function of 1 parameter.
# We test numSteps evenly spaced parameter values starting
# at minX, stopping at maxX.
def simple_find_zero(objectiveFunction, minX, maxX, numSteps = 100):
    xstep = (maxX - minX) / (numSteps - 1)
    best_x = minX
    best_y = objectiveFunction(minX)
    for i in range(numSteps):
        x = minX + xstep*i
        y = objectiveFunction(x)
        if abs(y) < abs(best_y):  # which is closer to zero?
            best_x = x
            best_y = y
    return best_x

print "The value of x that is best with a lot of steps is ", simple_find_zero(c, 0, 10.0, 100000)
print "sqrt(2) = ", math.sqrt(2.0)