Homework 3

1. Top-down design is essentially a method of problem solving through the action of breaking down a large and complicated problem into a lot of smaller and simpler sub-problems. A structure chart is what shows the ties of the smaller problems to illustrate the larger, full problem.
2. A function prototype is the declaration of the function before it is used and referenced. Function prototypes are typically located directly above the main function.
3. When a function is executed, the function prototype should occur towards the top of a program near the preprocessor directives and the function definition should occur below the main function and in its own separate, formatted location within the .c file.
4. Three advantages of using functions are the ability to be able to call a process multiple times without excessive amount of code rewritten, a less cluttered and more organized source file, and a more structured approach to solving a problem by breaking it down into sub-problems and then using functions to solve said sub-problems
5. The use of functions is a more efficient use of the programmer’s time because if the function is used repeatedly throughout the program it saves the programmer the time of rewriting the same code over and over again. I would disagree with the statement that the use of functions is a better use of the computer’s time because the computer would be executing the same amount of times regardless of what methodology of code was used.

#include <stdio.h>

#include <math.h>

int main(){

int s1, s2;

printf("Enter side 1 and side 2 for your triangle: ");

scanf("%d%d", &s1, &s2);

int cSq = pow(s1, 2) + pow(s2,2);

double c = sqrt(cSq);

printf("The length of the hypotenuse is %.2lf units\n", c);

return 0;

}

9. void script(int numOfSpaces, char disC, int numOfDisC);