**Take Home: Quiz 4 (15 pts) – Iteration and Loops**

Using Blackboard Learn <https://learn.wsu.edu/webapps/login/> submit your quiz. You will submit your assignment in the ***lab*** Blackboard space. Under the "Content" link navigate to the "Quiz Submissions" folder and upload your solution to the appropriate “Quiz” space. You must upload your solution, through an attachment, as <your last name>\_quiz4.pdf by the due date and time.

1. (5 pts) Draw a flowchart for an algorithm that finds the largest digit in a 0 or positive integer number. For example, if the given integer is 539, then the largest digit is 9. If the given integer is 55878, then the largest digit is 8.

Input a non-negative integer n

Let max = n % 10;

n /= 10;

max < (n%10);

True

max = n%10;

True

False

n > 0

False

1. (2 pts – 1 pt for return type, 1 pt/parameter) Provide the prototype for a function called find\_largest\_digit() that accepts one integer and returns the largest digit in the number.

int find\_largest\_digit (int n);

1. (8 pts – 1 pt for the function header, 6 pts for algorithm, 1 pt for return value) Provide the function definition for find\_largest\_digit(). Also, be sure to provide the function header for find\_largest\_digit(). Precondition: input integer must be >= 0.

int find\_largest\_digit (int n)

{

int max\_digit = (n % 10);

do

{

n /= 10;

if( max\_digit < (n % 10) )

{

max\_digit = (n % 10);

}

} while (n > 0);

return max\_digit;

}