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**Grade: 100000 /20**

**COSC 1435.001**

**Lab 9B**

Please use this document to submit your answers (Save As). Make sure you write your name in the designated space in this document.

***Please follow correct C++ syntax.***

1. Why do local variables lose their values between calls to the function in which they are defined? [2 points]

Because the function saves the variable’s value in memory, but only in the function. Outside the function or the {}’s or the scope (whatever you wish to call it), that same variable is just another variable like the others with no value until declared otherwise

1. a. Write a header for a function named distance. The function should return a double and have two double parameters: rate and time. [1 point]

double distance(double rate, double time);

b. Write a header for a function named getKey. The function should return a char and use no parameters. [1 point]

char getKey();

c.Examine the following function header, and then write an example call to the function. [1 point]

void showValue(int quantity);

showValue(54);

or

showValue(num1); depending on if quantity is already declared or if the user must input it

1. Write the function num2word(N) that converts an integer N to its English word equivalent. For example, num2word(4) returns the string "four". To keep this short, you may assume 1 < N < 4. To receive full credit, your answer must use a switch statement. [5 points].

Int main()

{

Int num;

Cout<<”please enter a number to have it converted into a word!”<<endl;

Cin>>num;

Num2word(num);

Return 0;

String num2word(int)

{

Switch (num)

Case 1 : cout << “ one” << endl;

Break;

Case 2 : cout << “two” << endl;

Break;

Case 3 : cout << “three” << endl;

Break;

Case 4 ; cout << “four” << endl;

Break;

Default: cout<< “invalid number” << endl;

}

1. The following statement calls a function named half. The half function returns a value that is half that of the argument. Write the function. The body of the function must contain only one statement for full credit. [4 points]

double result;

result = half(number);

double half(double num)

{

return num = num \* .5;

}

1. What is the output of the following program?**Show your tracing work in the form of a table.** You must identify any global variables and local variables of each function. [6 points]

#include <iostream>

using namespace std;

int x = 4; x = 4

int fun (int w, int z) w = 10, z = 2

{

w \*= 2; w = 20

z = x + z; z = 6

cout<< "w=" << w= << " z=" << z << " x=" << x << "\n"; w=20,z=6,x=4

return w%z; return= 1.2

}

int main()

{

int a = 10; a=10

int b = 2; b=2

x = fun(a,b); x=1.2

cout<< "a=" << a << " b=" << b << " x=" << x << "\n"; a=10,b=2,x=1.2

return 0;

}

Output: w=20 z=2 x=4

a=10 b=z x=1.2

I’m sorry I could not for the life of me, figure out how to make that information into a table. Haha what’s sad is I’m being completely serious.