CSCI110 – Fundamentals of Computer Science

MT SAC College

CSCI110

Lab #: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Description: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Due Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Grade: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Notes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Requirements of Your Lab Report

Your submission should include:

1. The cover page
2. The listing of the source code (See details shown below)
3. The screenshot of your program execution

The source code should be organized and presented as:

1. Prolog
2. Program Description
3. Author
4. Input variables
5. Process Flow
6. Output variables
7. A listing of source code with internal comments

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Lab 1

Requirements: Please work on p2.19 on page 69.

Due date: TBD

Submission includes 1) cover page 2) source listing 3) Screen shot of program execution.

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Lab 2

Requirements: Please work on p3.9 on page 119. Also, show at least 7 test cases (i.e., A, A-, B+, C-, D+, D-, F, etc.)

Test cases: You need to test at least 7 cases out of possible grades (A+, A, A-, B+, B, B-, C+, C, C-, D+, D, D-, F)

Due date: TBD

Submission includes 1) cover page 2) source listing 3) Screen shot of program execution.

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Lab 3

Hi guys,

This time you have two options:

The first option – Please work on p4.21 on Page 182

The second option (harder but much more fun) – Please work on p4.24 on Page 182

You can work on either one or both.

Due date: TBD

Submission includes 1) cover page 2) source listing 3) Screen shot of program execution.

Thanks!

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Term Project

Hi guys,

If you are interested in working on a term project so that you can earn up to 2.5 points, I will assign you one of the following problems:

1. P6.24 on Page 299
2. P6.25 on page 300
3. P6.33 on Page 301

Test Cases:

You need to design your own test procedures and test steps.

Due date: Prior to the last week of this term

Submission includes

1) The cover page

2) The source listing

3) A screen shot of program execution.

4) a demo to show your system.

Grading Policy:

1. The program should have no compilation and execution errors of any kind (25%).
2. You need to submit a full documentation (25%)
3. You need to demonstrate your program by showing the execution of your program based on various scenarios (50%).

Thanks!

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Lab 4A

Hi class,

Please work on P5.11 on page 238. When you test your program, please assign 4 to variable r (for example, r = 4.0) and assign 4 to variable h (for example, h = 4.0) so that you and me can check your program and figure out whether your program produces the right answer.

Due date: TBD

Submission includes

1) The cover page

2) The source listing

3) A screen shot of program execution.

Thanks!

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Lab 4B

Hi guys,

Please work on P5.14 on page 239. Please print the value of all variables before and after the function calls.

Due date: TBD

Submission includes

1) The cover page

2) The source listing

3) A screen shot of program execution.

Thanks!

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Lab 5A

Hi guys,

Please work on P6.9 on page 296

Test Cases:

1. Build two arrays that are identical and your program produces the message claiming “Both arrays are the same”.
2. Build two arrays that are different and your program produces the message claiming “Two arrays are different”.
3. Each array should contain at least 10 elements.

Due date: TBD

Submission includes

1) The cover page

2) The source listing

3) A screen shot of program execution.

Thanks!

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Lab 5B

Hi guys,

Please work on P6.12 on page 297

Test Cases:

1. Please use the sequence numbers as indicated in your book as input values

1 4 9 16 9 7 4 9 11

to fill out an array.

Note: Please print the input stream

1. Your array should look like

1 4 9 16 7 11

after all duplicates got removed.

Note: Please print the members of your final array

1. You should use a function to remove duplicated members. As indicated by your book, you need to pass the array size to a called program.

Due date: TBD

Submission includes

1) The cover page

2) The source listing

3) A screen shot of program execution.

Thanks!

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Lab 6A

Hi guys,

Please work on P7.5 on page 344.

Test Cases:

1. Please use the following sequence of numbers

1.3 4 5.2 16.3 9.99 7.21 4.5 7.43 11.21 12.5

to fill out an array.

Note: Please print the input stream

1. Please use two pointer variables as indicated in the program statement to code this program. Otherwise, no points whatsoever.

Due date: TBD

Submission includes

1) The cover page

2) The source listing

3) A screen shot of program execution.

Thanks!

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Lab 6B

Hi guys,

Please work on P7.10 on page 344.

Test Cases:

1. Please use the following sequence of numbers

1.3 4 5.2 16.3 9.99 7.21 4.5 7.43 11.21 12.5

to fill out an array (10).

Note: Please print the input stream

2. Then, you enter another 5 numbers as following

1.5 4.5 9.5 16.5 7.5 11.5

Note: Please print the members of your final array(n).

1. You should use the Dynamic Memory Allocation (DMA) technique to implement this exercise (See section 7.4 for more information).

Due date: TBD

Submission includes

1) The cover page

2) The source listing

3) A screen shot of program execution.

Thanks!

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Lab 7A

Hi guys,

Please work on the program (ch08/babynames.cpp on page 356) shown below.

//====================================================

// Lab7A.cpp : Defines the entry point for the console application.

//

#include <iostream>

#include <fstream>

#include <string>

using namespace std;

/\*\*

Reads name information, prints the name if total >= 0, and adjusts the total.

@param in\_file the input stream

@param total the total percentage that should still be processed

\*/

void process\_name(ifstream& in\_file, double& total)

{

string name;

int count;

double percent;

in\_file >> name >> count >> percent;

if (in\_file.fail())

{

return;

} // Check for failure after each input

if (total > 0)

{

cout << name << " ";

}

total = total - percent;

}

int main()

{

ifstream in\_file;

in\_file.open("babynames.txt");

if (in\_file.fail())

{

return 0;

} // Check for failure after opening

double boy\_total = 50;

double girl\_total = 50;

while (boy\_total > 0 || girl\_total > 0)

{

int rank;

in\_file >> rank;

if (in\_file.fail())

{

return 0;

}

cout << rank << " ";

process\_name(in\_file, boy\_total);

process\_name(in\_file, girl\_total);

cout << endl;

}

return 0;

}

//==================================================

Program development and test requirements:

1. Please use the file (“babynames.txt) which I sent to you to test your program.
2. You need to debug the program so that you can remove all bugs and get the program work for you.
3. You need to add codes to create an output file and write output streams to the file (“output.txt”).
4. You need to print the content of “output.txt”.

Due date: TBD

Submission includes

1) The cover page

2) The source listing

3) A screen shot of program execution and a printout of the file of “output.txt” .

Thanks!

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Lab 7B

Hi guys,

Please work on P8.4 on page 380.

Test Cases:

1. Please create a file contains 10 sets of a pair of two floating numbers.
2. Then, your program should get the file name entered by a user and subsequently input these 10 sets of record from the file and produces a report showing a table containing 2 columns and an average of each column.

Note: Please print the table that the program produced. By the way, each column should have a title.

Due date: TBD

Submission includes

1) The cover page

2) The source listing

3) A screen shot of program execution and printout of the table.

That is it, folks! Thanks!