**Course Name (CMPS-378)**

**Fall 2014**

**T 6:50 – 10 pm**

**Project # 5:**

**Title: Two Dimensional Arrays**

**Due Date: 11-04-14**

**GROUP #: 6**

**Grade:**

**e-mail:** [**jeremy.driesler@laverne.edu**](mailto:jeremy.driesler@laverne.edu) **Submitted by Jeremy Driesler**

**major: Computer Science/ Engineering concentration: Software**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Y**  **I**    **N** | **Description - 10%**  **= Incomplete**  **= No** | **Y**  **I**    **N** | **Design – 15%**  **UML and flowchart; pseudocode - if asked** | **Y**  **I**    **N** | **Code – 50%**  highlight and comments piece of the code which you had to **add** or **modify (worth 10 %)** | **Y**  **I**    **N** | **Test – 25%**  **Test plan (4 test cases – include boundary testing) with screenshot results** |

**Submitted to**

**Prof. Jozef Goetz**

**University of LA Verne, La Verne**

**Project Evaluation**

1. The **problem statement** or specification of the problem (**10%**)--A clear, correct description of a problem: describe input, calculation and output phases.

**1a. Input**

If your program has a user interface, describe it here. Describe the input data.

**1b. Processing**

Explains the purpose and the design of your program. It can include discussion the method used to solve the problem.

**1c. Output**

Describe the output data.

Use the following format **as in the example:**

**1a. Input**

The user is asked to enter three integers which are stored in three separate variables. The input is done through a console application.

**1b. Processing**

The purpose of the program is to calculate the maximum, the minimum, and the sum of the numbers input by the user. This is all done in the program’s main method. The minimum and maximum numbers are determined through a series of “if” statements. The sum is calculated by adding the three input numbers together.

**1c. Output**

The program asks the user for three integers. The program then displays the minimum and maximum numbers entered by the user. The sum of the input numbers is calculated and is also displayed to the user.

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***place in your source code as first few lines**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* **Name:** Alex Berdkowski

\* **Class:** CPMS 378,

\* **Assignment #: 1,** Arithmetic, Smallest and Largest

\* **Date Due**: 9/09/14

\* **Problem Description (**Explains the **purpose** and the **design** of your program. It can include

discussion the method used to solve the problem.)

\* To find the minimum, maximum, and the sum of

\* three integers input by the user. The user is asked to enter three

\* integers. The maximum, the minimum, and the sum of the numbers are

\* calculated. The results are displayed to the user.

\* **Type** **Variable** **Description**

\***Input:**

int num1, // declare first number

num2, // declare second number

num3, // declare third number

\***Output:**

int sum, // declare sum of numbers

average, // declare average of numbers

product, // declare product of numbers

smallest, // declare smallest of numbers

largest; // declare largest of numbers

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1. **Design (15%): UML and a flowchart; pseudocode - if asked.**
2. **Sample Inputs and Results (25%) -** Provide **screenshots** of at least **four (4) sets of sample inputs (test cases**) **and results** including **boundary testing**. **Boundary testing** or [boundary value analysis](http://en.wikipedia.org/wiki/Boundary_value_analysis), is where [test cases](http://en.wikipedia.org/wiki/Test_case) are generated using the **extremes of the input domain**, e.g. **maximum, minimum, just inside/outside boundaries, typical values, and error values**. Capture of any test data files content used as input to your program. Capture the screen using **ALT + PrntScrn** keys. Use “**echo printing**” i.e. printing out the input values.
   1. In a case of a console application use an outer loop statement to run a new set of data until a user enter special value e.g. “-1” or “quit”.
   2. Prove that 100 percent of the time works every time for the conditions defined in problem statement.
3. **Source Code** (**50%**) - highlight (use yellow color) elements of code which you had to **add** or **modify** in comparison to the original code**, otherwise** expect up to **10% reduction of the project grade**.

* Each time when you change or insert a code you need to put a **comment** in front of the code and sometimes at the end of the code as well.
* All **Addition/ Modification/Deletion/Replacement** should be abreviated to **AD/MOD/DEL/REP** respectively.
* Students should follow the following format for **comments** :

**//[date] [your name] [AD/MOD/DEL] [efected # of lines] [-short description of the code]**

Example:

**// 3/8/15 JGoetz AD 5L - define the UriMapper object**

highlight new or modified or replaced code

**Note**: The **comment is indented** by 5 spaces!

Your code should be **high quality** i.e. **easy to read,** **well-organized, well-structured, well-commented** and **well-documented** code is **worth 20%.**

You will **lose points** for **insufficient** **documentation, unnecessarily complicated code**, or **bad style**. As a general rule, the harder it is for me to understand your code, the more points will be deducted.

* 1. a **well-commented** source code listing
  2. comment any variables, constants, methods, classes. **Note.** Variable, constant, GUI control names and method names should be **self-explanatory!!!**
  3. comment before any loop statement
  4. use bold for the key words
  5. the source code includes clarity, robustness (**error handling for the entered values**) and the user interface.
* Each assignment will be submitted in a clear **plastic** binder with a **firmed attached** USB flash drive otherwise you will **lose 10%.**

**NOTE**: Submit a printout of **all source code**, diagram, input data and results and a USB drive (*thumb drive)*. The USB drive should contain only the workspace files for the current assignment (the **source** code, **VStudio files**, executable file, results and your project submittals document).