

**Department of Computer Science.**

**Georgia State University**

**CSc 2720**

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**Fall 2017 - Assignment #1**

**Due Friday, September 1<sup>st</sup> 2017**

**Note:** (1) For all assignments, always use comments to explain your program.

(2) No copying allowed. If it is found that students copy from each other, all of these programs will get 0.

(3) You must use the name given to name your program. Should you use a different name, you would lose 5% of what the program is worth.

**Objectives:**

1. To gain experience with multi-dimensional arrays.
2. To gain experience with generic algorithms.

**Description of program:**

You are to write a program name **matrix.java** that multiply and add 2 matrices.

**Requiriements:**

1. Your program should prompt the user for the dimensions of the two matrices, then check for compatibility (remember 2 matrices can be multiplied only if the column of the first is equal to the row of the second). You could prompt for ONE dimension and build two square matrices. **Minimum dimension of matrix must be 25.**
2. If the above is not met, prompt the user for new and compatible dimensions.
3. Now generate random **integer** numbers (ranging from 1 to 30) to fill both matrices.
4. Display these two matrices on the screen.
5. Multiply the two matrices and display the result on the screen.
6. Insert a clock to see how long it would take, in milliseconds, to multiply these two matrices and **display the time (with a message to this effect).**

7. Now add the two matrices and display the result on the screen.
8. Insert a clock to see how long it would take, in milliseconds, to add these two matrices and **display the time (with a message to this effect)**.
9. Prompt the user asking if they want to repeat the program.

**What to turn in:**

**Turn in your .java and .class/.jar files in the subdirectory for your section of CSc 2720 that you registered for that are listed under the A#1 directory no later than 11:00 p.m. on September 1, 2017.**