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**Data Structures & Algorithms for Games & Simulation II**

**IGME 309-02, 2014 Spring**

**Midterm – Practical**

Instructions:

A) Read this whole document before you start.

B) Using the provided code, implement a program that replicates the behavior described below and in the provided sample (MidtermDemo.exe under \_Binary)

You are handed out code that performs this out of the box:

Your goal is to make the shape perform a full rotation over itself and orbit in a time based manner while displacing the Creeper 3 units from the center of the Earth (Take in consideration that the rotation if affection the ORIGIN of the creeper shape, not its center point, so when the Creeper is at 12 o’clock its center is at 3 + center height units and when its at 6 o’clock its at 3 – center height units).

Please execute the included binary so you get clearer better view of what I’m asking of you.

I’m providing a fTotalTime that advances as the clock advances, the shape needs to rotate at a rate of 15:1 (15 degrees for each second) and the distance from the center is always the same (3)

Calculating the m\_m4Creeper matrix should be perfomed in the CalculateSpherePosition method and the bounding sphere in the CalculateBoundingSphere method, you need not to change anything in any file other than the Aplication.cpp.

Requirements:

* Your code MUST compile AND execute. I will not take points out of the program if it doesn’t compile AND/OR run, I will simply not grade it. If your program does not run it will receive a 0/100. If you are having trouble with something in the code comment out the lines, say what you wanted to do and what you suspect the issue is. That will result in partial credit, which is better than not having a grade.
* Memory Leaks are acceptable, points will be taken off, but the code will be reviewed.
* You only need to modify Application.cpp and MyshapeClass.cpp there is no need to modify anything else.
* You get rid of the “trash files” (intermediary files). (Z\_Delete folder AND sdf file)
* Zip your solution and upload it to the dropbox in my courses.

Grading:

(-???) Cheating:

Talking with anyone in person or online. You are only allowed to use MyCourses to download this file or upload your solution. Anything else is considered cheating.

(-100) Code not compiling or executing.

(-10 to -20) Memory leaks (You are not reserving new memory for this test so this shouldn’t be an issue)

(-10) For each uncommented method. I need to know what you are doing or trying to do.

(-10) You forgot to delete the Z\_Delete folder

(-10) you forgot to delete the .sdf file

Extra points:

There are no other extra points specified for this exam, except for one thing: surprise me (in a good way). As I don’t know how surprised I will be I can’t tell you how many extra points I will give you, just do your best, and as usual, in order to get the extra points you need to have a satisfactory degree in the required part.