

2015.1 Human Media Multicore Computing  
Project 3: CUDA/OpenMP Ray-Tracing (Team Project)  
(Due : June 14th 11:59pm)

**Step 1. make a team**

- team size : 1~5 members
- select a team leader and members

**Step 2. Implementing two versions of Ray-Tracing that utilizes CUDA and OpenMP**

- You may assume the simplest form of Ray tracing that renders a scene with only spheres.
- Program output format : either (i) or (ii) is OK
  - (i) print ray-tracing processing time of your program using OpenMP
  - (ii) print ray-tracing processing time of your program using CUDA
  - (iii) generate an image file that shows the rendering result  
or generate a window that shows the rendering result on screen.

**Step 3. write a final report (pdf) that includes**

- project title, member list
- execution : describe (i) execution environment (OS type, CPU type, graphics card/GPU type, memory size) (ii) how to compile, (iii) how to execute
- your group's contribution (describe exactly what your group actually did for this project)
- part of source code (OpenMP code part and CUDA code part) and detailed explanation on the OpenMP code and CUDA code
- other implementation issues (describe how you implemented)
- program output results including screen capture pictures.
- experimental results : measuring the performance (execution time) of your OpenMP/CUDA implementation and your single threaded CPU implementation. show the performance results and screen capture of output results.
- conclusion : summarize your project result

**Step 4. submission** – only team leader submits to eClass (deadline: June 14th)

- final report (should include a list of team members with student ID#)
- source code files
- executable file
- README.txt file (describe (i) execution environment (OS type, CPU type, GPU type, memory size) (ii) how to compile, (iii) how to execute)
- **핸드폰으로 동영상 촬영((a)프로그램 실행 및 결과 촬영, (b)해당 OpenMP, CUDA 코드 보여주면서 간략히 설명) 해서 동영상 file도 같이 제출.**

**No Presentation** ~~Step 5. presentation~~ : each team should give short presentation on June 15th.