Computer Graphics

Course Description

1. Overview of Computer Graphics
2. Graphics Programming using OpenGL
3. Two-Dimensional Graphics
4. Three-Dimensional Graphics
5. Advanced Graphics Techniques
6. Vitual Reality

No of credits: 02

Lectures: 1.5

Practice: 0.5

Prerequisites

- Good programming skills in C/C++
- Basic Data Structures
  - Linked lists
  - Arrays
- Simple Linear Algebra
- Geometry

References/Tools

- Slides
- Edward Angel, *Interactive Computer Graphics: A top-down approach with OpenGL*, Addison Wesley, 6th edition, 2012
- Dave Shreiner, *The OpenGL Programming Guide*, The Redbook, Addison-Wesley, 8th edition, 2013
- www.opengl.org
  - Standards documents
  - Sample code
- Tool: Dev-Cpp 5.4.1 MinGW 4.7.2 (recommended):

  Link: http://www.bloodshed.net/
- OpenGL Lib: GLUTMingw32

Grading

- On-going assessments:
  - Workshops (W): 20%
  - Diligence: (D):10%
  - Middle exam (ME): 20%
- Final exam (FE): 50%
- Total score = 0.2*W + 0.1*D + 0.2*ME + 0.5*PE

Install Dev-C++ and GLUT Lib

- Download Dev-C++ and install it

  http://www.bloodshed.net
- The installation with a simple C program
- Download and install GLUT
  - **glut.h** ⇨C:\Dev-Cpp\include\GL
  - **libglut32.a** ⇨ C:\Dev-Cpp\lib
  - **glut32.dll** ⇨ C:\WINNT\System32 (or similar location)
  - Tell the linker where the libraries are by:
    - clicking Tools/Compiler Options/Compiler/Add the following commands when calling the linker
    - adding **libopengl32.a, libglu32.a, libglut32.a**. (should be added in that order)
- Test Dev-cpp with GLUT

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Enjoy the Course…!