Computer Graphics

Virtual Environments: Evaluation

Spring 2015

Evaluation

- You will work on an assignment during the course that will be submitted for evaluation

  – *Starting today!*

- Your assignment should demonstrate your understanding of how to implement concepts taught

- The assignment requires that you

  – **Develop an interactive 3D application**

  – **Document design and concepts applied in a report**

- Deadline 21th May.

Evaluation

- Should demonstrate concepts from each of the weekly topics (see next slides)

- Key here is that you demonstrate an understanding of the concepts taught

- If your work is based on something found online (i.e. shader technique), reference the source

- We value the programming and your code, so make sure your code is <u>clean</u> (readable) and document the code where it is needed

- Delivery document is very important for highlighting your strengths, as well as explaining how/why/what you did

Evaluation

- Application can be either a simulation or a simple game
  - e.g. arcade game, interior design, educational or sport simulator
  - Can use (for example) Google Warehouse or contact us for help with models, if necessary

- Make sure your application does not limit you (in terms of what you can demonstrate)

- Feel free to contact the lecturers for feedback if you are unsure whether what you are trying to do is too simple or too complex

Evaluation

- ## Report must describe
  - What you have developed
  - Why you developed this
  - How you developed it
  - Highlight all the usages of different techniques and concepts in your application. Detailing what it is, how it is implemented, (and why you implemented it).
    - Sketches/diagrams etc.
    - Reference to relevant code
  - How to use your application (so the examiner understands how to use it)

Evaluation – Recap of concepts (basic)

- Intro
  - Scene Graph (logical structure)
  - Coordinate Systems (World and local space)
  - Transformations
- Content
  - Geometry/Meshes (ie. build programmatically)
  - Appearance, MaterialDefinition
  - Shaders (simple effects, or something more complex?)
  - Lights
  - Transparency
  - Loading Models

Evaluation – Recap of concepts (basic)

- User Interaction
  - Input Handling, event listeners
  - Camera, handling and navigation
  - Picking
  - Separation of logic (AppStates and Controls)

- Animation
  - Interpolation (could build your own custom animation system)
  - Animation tricks using Shaders
  - Skeletal Animation
  - Animation listeners
  - Building keyframe animation programmatically

Evaluation – Recap of concepts (basic)

- Physics
  - Concepts from Simulation lecture

- Optimization
  - Optimize using techniques taught
  - If none are applicable you need to document why! Good idea to implement some anyway

- Immersion
  - …
  - (Oculus Rift)

- (Other)
  - jME built in systems (terrain, water, particles etc) can be used to improve the appearance of your application, but solutions you code and describe yourself will give count more
  - -The more advanced stuff you do the better, but this should be considered extra, and you may not get any credit for it

Evaluation

- You may be called in for an additional oral exam at the faculty's discretion
    - Oral exam focuses on work handed in

March 2015

Advice, Questions, Guidance

- E-mail addresses:
  - Tom-Robert: tom-robert.bryntesen@hrp.no
  - Michael Louka: michael.louka@hrp.no
  - Thomas Winger: thomas.winger@hrp.no
- Can also visit us in Os Allé 5 (3rd floor)
  - Need to phone first to be let in so best to arrange visit via e-mail beforehand