**COMP371 Lecture UU - Project Proposal**

# Team:

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# Goal

The objective of the project will be to create a game using 3D graphics and OpenGL. The game is called Medieval Knieval and consists of two characters jousting on motorcycles in honour of their king. The user will interact with our project using the keyboard. Two players at a time can control their characters in the game.

# Challenge

The challenge for our team will be that nobody has past experience in OpenGL or computer graphics. As for the game itself, the concept is rather new so examples or related games to model after are not abundant. Our team will have to make use of all possible coding resources for OpenGL, while displaying creativity for implementing this relatively new concept.

# Approach

Here is a list of the components that we want to develop, as well as some which we might develop:

* + View Frustrum Culling
  + Occlusion Culling
  + Physical Simulation
  + Key Frame animation
  + Collision Detection
  + Particle Systems
  + Sound Effects
  + Hierarchical Scene Graph (maybe)
  + Scripting Language (maybe)
  + Motion Capture Animation (maybe)
  + Procedural Modeling (maybe)

The most important components that will need to be developed are the Physical Simulation and Collision Detection so that the game is playable.

We will be using STL for math and debug console information. For game related dynamics, there is a possibility that we will use SDL. Other than these two, we will use the regular GLU and GLUT libraries that come packaged with the GL library.

# Methodology

To deliver our game on time, certain tasks will be done before others. To succeed, the models in our game need to be developed first, followed by movement, camera settings, gameplay and finishing with special effects. In particular, completing the gameplay is the most difficult part with special effects being the most time consuming. By following this plan, it will assure that our game is at least playable. If our team runs out of time, some special effects will be scoped out.Some aspects of the gameplay may also be scoped out if time is running out.

# Metrics

Our team will consider our project completed and a success if the models, movement, camera settings, gameplay and main components outlined in the approaches section are completed. If time allows we will add nice to have features, approaches and special effects.

# Summary

Our team is entirely new to graphics, so this project will allow us to get creative and learn how to use OpenGL, SDL and STL*.* In addition, we will learn how to implement components in order to control a camera’s field of view, create effects, utilise hardware and more . . . . Ultimately, this project will give our team valuable experience in communication, time managementand design.