Final Project

In your project you will implement a 3D snake game based on the previous assignments.

Requirements (75%):

- Snake constructed from scaled snake3.obj (or snake2.obj if snake3 is too heavy) and 16 joints (16 links). You may add head or tail and more joints.
- The user can switch between two points of view:
    1) From top view. Static camera as we are used to.
    2) From the snake head point of view (first person). Use camera_eye, camera_up and camera_translation of ViewerCore.
- Menu at the beginning of game and between levels (show the score after each level.
- Prices: Moving object that when is reached gives extra points or special abilities to the snake. Each object has different initial velocity (vector in 3D).
- Skinning (use libigl tutorial). You will have to calculate weights for each vertex. Weights for the skinning sum to 1 for each vertex. Each point on the snake will be influenced at list from the 2 closest joints. Use may use the function of tutorial 404 of Libigl.
- You must use Collision detection to detect whether the snake touch an object.
- After certain amount of time past or certain number of objects were collected announce about end of level (you may use command line). Ask the user if he wants to play again of continue to the next level.

- Scoring mechanism (you may use command line to show the score)
- You may use first loop of the FABRIK algorithm to move the snake in space.
- Readme file

Additional Points (Up to 25%)

Choose couple of topics from the following list (grade will be given according to the difficulty of the task you implemented):

- Special snaky locomotion on the base
- Fog
- Texture (see tutorials 301 and 501-3 to find the best texture coordinates)
- Moving the objects or the snake according to Bezier curve (show the curve using layout edges)
- Sound
- Splitting objects (use libigl tutorial)
- Interactive User Interface using ImGui (including show the score on the screen during the level)
- Gravity and bouncing objects.
- Cubemaps (see learn opengl site)
- Preventing self-collision of the snake
- Your ideas

Submission in pairs to Moodle. As in the last submissions add readme file (of what you did and difficulties and link to your git repository.

Submission date 13/02/22