

HACETTEPE UNIVERSITY

DEPARTMENT OF COMPUTER ENGINEERING



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Homework

PROGRAMMING ASSIGNMENT 3

Subject: OpenGL transformations and basic GUI

Advisors: Asst. Prof. Ufuk ÇELİKCAN, R. A. Burçak ASAL

Program language: C ++ and OpenGL library

PROBLEM

We have a shape and we have to apply 3 state first one of them id rotate the around center of itself. The second task was make a heart beating shape. Last task was rotate shape also in same time draw a spiral path. Just user when want the task will be run. And user can stop and run again.

METHOD AND SOLUTION

First all things I want say I couldn't success nanogui so I have to take input from keyboard.(I try to use nanogui but when I used it my previous shape doesn't draw and I couldn't use shader that's why I don't used).In first task I get angle value and changed it about rotation speed. So my shape rotation around itself also I store a Boolean value so I know which task I in or not. Second task was make heart beating so I have to change only size of shape so I get a value in scaling matrix and changing it time. And the last task rotate shape around itself as same as when the shape around a spiral path so I get spiral formul from math then I changed angle so I know where is my current location on spiral path.

In this assignment I learn how much hard using a library that we don't have any idea about. Also how can we use matrix to rotate , scaling and move a shape.

KEYBORD INPUT MEANING

ROTATION

R → start rotation of the shape if paused keep continue

S → stop rotation the shape

U → up speed of rotation

L → down speed of rotation

BEATING

H → start beating of the shape if paused keep continue

S → stop rotation the shape

SPIRAL PATH AND ROTATION

M → start task 3 if paused keep continue

U → up speed of rotation for task 3

L → down speed of rotation for task 3

S → stop task