Lab 10

CSE 165: Object Oriented Programming

Spring 2022

(100 points)

This programming assignment has two tasks, complete each task as instructed. Write a separate file for each of the following tasks. To submit your assignment, please organize your code in the folder "Lab10" by placing your code in its corresponding sub-folder. For example, store your code for task 1 in the following directory "Lab10/1/". Then, submit the compressed version of folder Lab10 to CatCourses. Submissions must arrive by one minute before the lab section of week 13 (4/11 – 4/15). All of the files you need for this programming assignment are available in a ZIP archive file called "Lab10.zip".

1. **Time class (40 Points)**

   Create a `Time` class. It should have fields for hours, minutes and seconds. It should overload add (+) operator. The add (+) operator should return a new `Time` object which holds the result of the addition. The file `Time.cpp` provides a basic test.

   Expected Output:

   4 hours, 35 minutes, 38 seconds
   5 hours, 56 minutes, 8 seconds
   11 hours, 52 minutes, 16 seconds

2. **Qt (60 Points)**

   In this problem, you will learn how to handle mouse and keyboard input in Qt.

   Task 1: Key and mouse input example

   Download the zip folder `KeyPressMouseExample.zip` and extract its content. Next open Qt Creator and load the `KeyPressMouseExample.pro`.
   Study `mainwindow.h` and `mainwindow.cpp`. Try to change the code and see the changes by running the project.

   Task 2: Connect your tetrahedron

   Add the following functionalities to your previous lab's tetrahedron (or cube) project:

   1. Make your tetrahedron (cube) move along the x-y plane when the user presses up-down and left-right buttons.
   2. Make your tetrahedron (cube) rotate around the y axis when pressing 'A' and 'D', around x axis when pressing 'W' and 'S', and around z axis when pressing 'Q' and 'E'.
   3. Make your tetrahedron move along the x-y plane, when we drag it by mouse.