

CS4379B/5389
Graphical User Interface
Assignment 1
Due: June 8, 2020

June 3, 2020

Submission Instructions:

This is an extra credit assignment it carries an extra 3% of your total grade.

1. Please submit your work directly in TRACS (using the TRACS editor) or as a text/MS-word/PDF attachment by the due date/time.
2. Please write your name in the assignment header and as a part of the file name of the attachment.
3. It must be your own work – a penalty of at least one grade in your final grade and a report to the Dean of Students will result from sharing work or using other people work.
4. Please submit your assignment by the deadline – late submission will not be accepted and will result in a grade of 0.
5. A grade of 1 denotes an issue with your assignments, which you have to resolve with the instructor.
6. Please do not submit your assignment via email. If you have a justified documented reason for being late then please submit the assignment to your TRACS drop-box and notify me by email.
7. Please use only zip for compression.
8. Please submit only the source code of your program in C (C++) + OpenGL / QT library functions. In addition, please submit an image (in JPEG) that shows the scene obtained through running your program. If I have doubts or concerns about your program, I may request that you submit the entire files required to produce a working program under Linux so that I can test your submission.
9. The code should include remarks that explain any non-trivial part of the code. For example, if you use a spin-box then you do not have to explain what it is. On the other hand, if you connect a spin-box to an LCD, you should have comments to explain what is being done.
10. At this point, I do not care too much about usability and detailed design. The goal is just to exercise using these widgets.
11. Instructions on how to produce an image of your scene are given below.

Assignment Instructions:

Enclosed is the code for SlideAndSpin.cpp.

The function arranges a spin widget and a slider widget in vertical layout. Please rewrite the function so that it uses a horizontal layout.

```
#include <QApplication>
#include <QVBoxLayout>
#include <QSlider>
#include <QSpinBox>
int main(int argc, char *argv[])
{
    QApplication app(argc, argv);
    QWidget *window = new QWidget;
    window->setWindowTitle("Enter Your Age");
    QSpinBox *spinBox = new QSpinBox;
    QSlider *slider = new QSlider(Qt::Horizontal);
    spinBox->setRange(0, 130);
    slider->setRange(0, 130);
    QObject::connect(spinBox, SIGNAL(valueChanged(int)),
        slider, SLOT(setValue(int)));
    QObject::connect(slider, SIGNAL(valueChanged(int)),
        spinBox, SLOT(setValue(int)));
    spinBox->setValue(35);
    QVBoxLayout *layout = new QVBoxLayout;
    layout->addWidget(spinBox);
    layout->addWidget(slider);
    window->setLayout(layout);
    window->show();
    return app.exec();
}
```

Instructions for using the VM (assuming a Windows x64 environment)

- 1) *Download* and *install* virtualBox
- 2) *Download* the Mint-Qt4.7-opengl-qtspim (CS VM) (zip file) from
- 3) <https://downloads.cs.txstate.edu/>
- 4) *Unzip* using WinZip, 7-zip, or RAR and place in a folder of your choice.
- 5) *Start* the VirtualBox VM player and hit new.
 - a. *Name* your machine
 - b. *Choose* the Linux (*Type*) and Fedora 64 (*Version*) options
 - c. *Set* the memory (to about half of available)
 - d. Next (hit *next*) chose the “use an existing virtual hard disk file” and navigate using the file icon to the location of the CS VM on your hard drive
 - e. Choose this file (icon) and get started
- 6) Shut down the machine and restart
- 7) Use the *Devices* option to set the number of processors (again half of available)
- 8) *Enable* the shared clipboard and the drag and drop options.
- 9) Shut down the VM Player and start again. You are G2G.

To develop your own programs please take a look at the examples I did in class. In specific the following is an example for the Vertical spinner and slider application available on TRACS\Resources\Misc\QT-OGLEExamples.

- a) Place the file SlideAndSpin.cpp in a folder named SlideAndSpin in the VM and open a terminal in this folder.
- b) Issue the set of instructions:
 - a. `qmake -project`
 - b. `qmake`
 - c. `make`
- c) Run the program (`./SlideAndSpin`)

Note, the best way to transfer files from Linux to host is via right click on the USB icon in the bottom right part of the virtual machine.