Lecture 02 - OOP and the STL in C++

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CSCI 0422 - Geometric Modeling (Spring 2022)
Learning objectives

By the end of this lecture you will be able to:

- clone a repository with git,
- define classes and create objects,
- follow conventions we will use throughout the semester,
- practice some more with header files,
- use common data structures and functions from the Standard Template Library (STL).
Getting started

- Open VS Code and click on Terminal
- Navigate to where you want to store the exercises for today.
- **Only Windows**: switch the Terminal from PowerShell to Git Bash.
- Clone the repository using:
  ```bash
  $ git clone https://gitlab.com/csci422-s22/class02.git class02
  ```

- **Only Windows**: switch Terminal back to PowerShell and navigate to where you want to work:
  ```bash
  $ docker run \
  --entrypoint /bin/bash \
  -p 7681:7681 \
  --rm \
  -v `pwd`:/opt/flux \
  -it \
  flux
  ```

- Build and run:
  ```bash
  $ cd class02
  $ make
  $ ./program
  ```
With the person sitting next to you...

In VS Code:

- Click on the Live Share button at the bottom-left.

  ![VS Code Live Share Login](image)

- Sign in with **Middlebury email address even if you have a GitHub account**.
- Your name should then appear at the bottom left where it previously said Live Share.
- Click on your name, you should see this:

  ![VS Code Live Share Options](image)

- Have one person send the second person the invite link (via private message in Slack).
Exercises for today.

- We will mostly write code together but there will be a few exercises for you to fill in with your partner.
- You can follow along with the notes at https://gitlab.com/csci422-s22/flux-base/-/tree/main/notes/class02
- After class, the solutions will be available at the same link above.

repl (just in case): https://replit.com/@pcaplan/csci422-exercise02?v=1 (then click Fork repl)
Exercise: items in a grocery store.

- Create a map that associates grocery store items with their price (as a real number).
- Use a string to look up each item.
- Add at least three items to your map.
- Use a loop and iterators to print out the contents of your map.
Before next class...

- Install CMake by following the instructions in the notes: https://gitlab.com/csci422-s22/flux-base/-/blob/main/notes/class02
- Please come to office hours if you are having trouble installing stuff. Tuesdays 1:30pm-3:00pm, Thursdays 11am-12pm, Fridays 11am-12pm.
- Remember to complete Project0 by Tuesday 02/22 at 11:59pm.