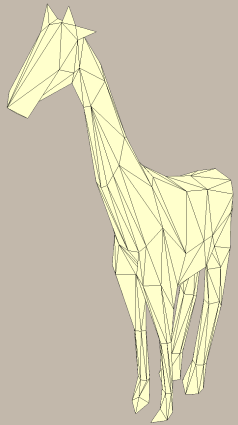

Lecture 02 - OOP and the STL in C++

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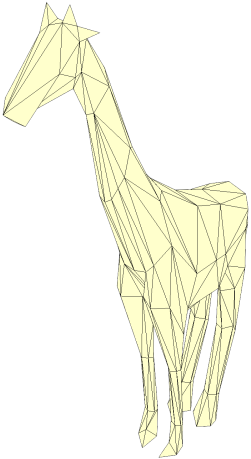
CSCI 0422 - Geometric Modeling (Spring 2022)

Middlebury

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:

```
$ 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:

```
$ docker run \
    --entrypoint /bin/bash \
    -p 7681:7681 \
    --rm \
    -v `pwd`:/opt/flux \
    -it \
    flux
```

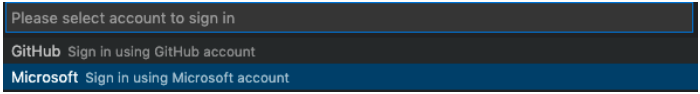
- Build and run:

```
$ cd class02
$ make
$ ./program
```

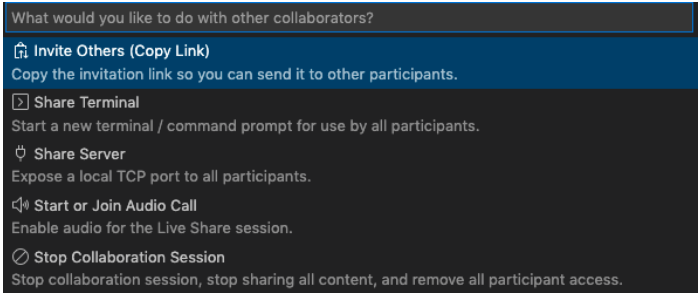
With the person sitting next to you...

In VS Code:

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



- 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:



- 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.