

CS010C

Lab1

Introduction

- Yue Zhu (“Yoo-eh Joo”)
 - “Yue” is too short so sometimes I don’t notice if someone is calling me
 - Feel free to call me by my nickname “ZY”(or fullname ZhuYue, or YueZhu)
 - Email: yzhu303@ucr.edu
 - Slack: DM / channel + @

- To be honest, my English...

- Even worse?
- If you're not getting it, it's not your fault

- Just

- simply ask me again
- wait until after class
- feel free to send me a message or email anytime

Reading (0–30)

29

Listening (0–30)

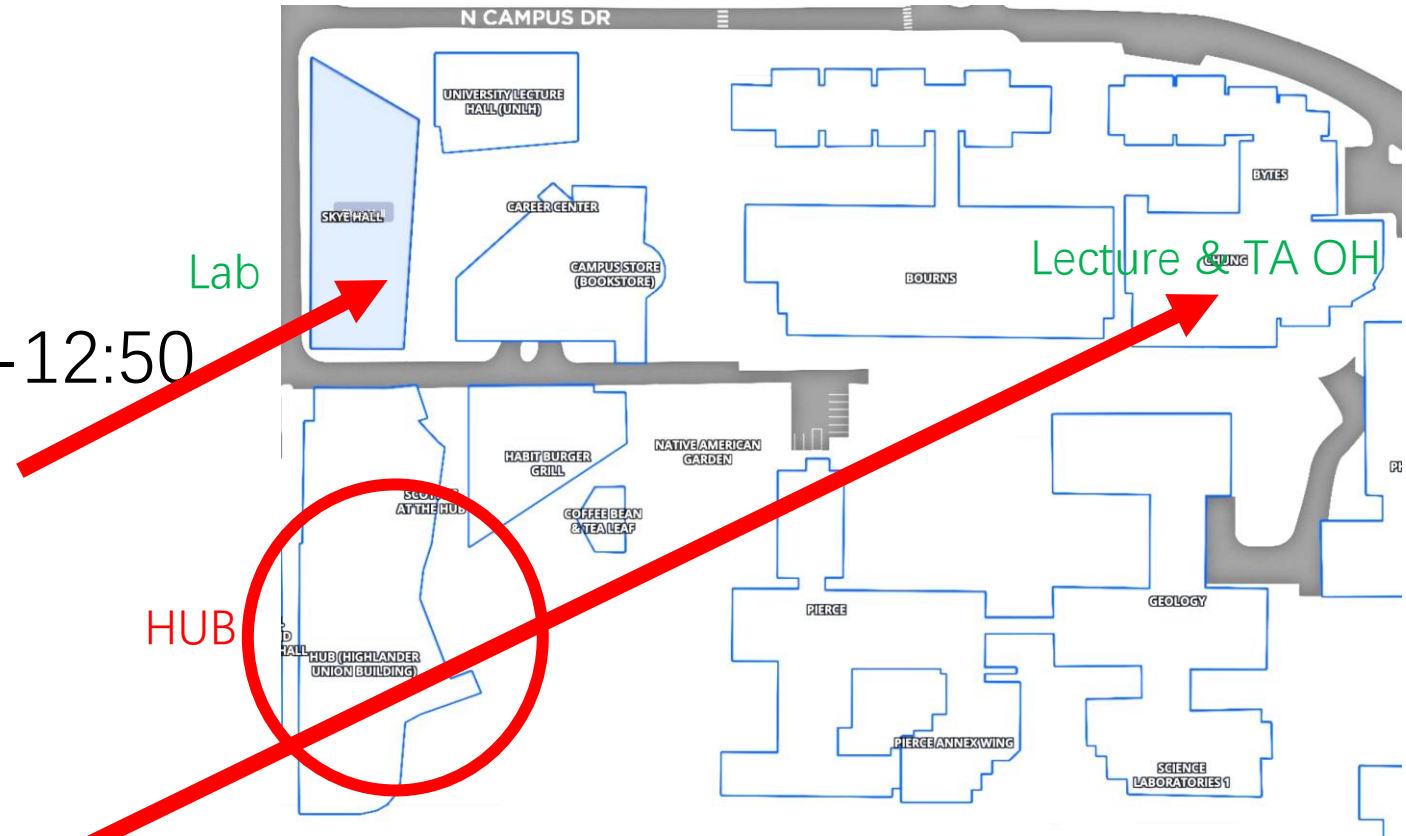
25

Speaking (0–30)

23

Information

- Tuesday & Thursday 10:00-12:50
- Lab: Skye Hall | Room 171
- Attendance: 10:10 & 12:00
 - Attendance sheet
 - $10 * 0.5 = 5$
- Recording
- TA Office Hours(3h)
 - In-person at WCH 459(2h?) & ZOOM(1h?)
 - Thursday 2-5pm? Friday 2-5pm?



Test Student	✓	✓	ZY	Y	Y
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Preparation

- Slack channel
 - Canvas -> CS010C -> Slack -> Join -> “general”
- Zybook labs
 - <https://learn.zybooks.com/zybook/UCRCS010CRusichSummerSessionB2025>
- AWS labs(TBD)
- AI helper
 - Chat App: [ChatGPT](#), [Gemini](#), [Claude](#), [Deepseek](#), ...
 - Code Assist Extension: [GitHub Copilot](#), [Cursor](#), [Gemini Code Assist](#)

general

@Okey Uchendu created this channel today. This is the very beginning o

 Add Coworkers

 **Okey Uchendu** 8:59 AM
joined #general. Also, Ryan and Yue Zhu joined.

 **Ryan** 9:26 AM
Test


B I     

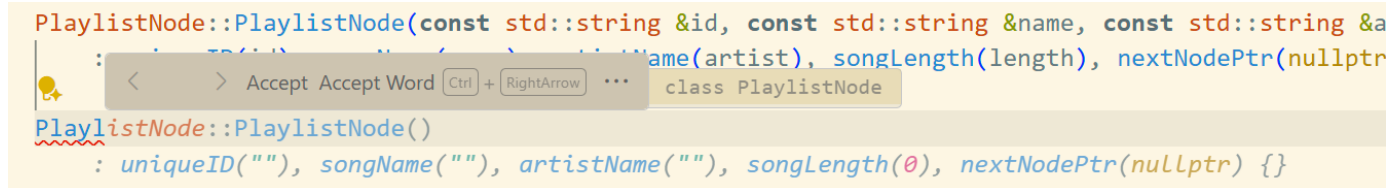
Message #general

+     

Code Assist

- embedded in the IDE
 - Just press “Tab” to accept
 - (or “Ctrl” + “→” to accept word or “ESC” to cancel)
- saves lots of time!
- Example: [Local debugging in VSCode](#)

- Things to note
 - Don't over-rely on AI!
 - AI makes mistakes!
 - It only understands part of your code.
 - It cannot read your mind.



The screenshot shows a code editor with a completion menu open. The menu lists two options: `PlaylistNode::PlaylistNode(const std::string &id, const std::string &name, const std::string &artist, songLength(length), nextNodePtr(nullptr))` and `class PlaylistNode`. The first option is highlighted. Below the menu, the code `PlaylistNode::PlaylistNode()` is visible, followed by a line of code: `: uniqueID(""), songName(""), artistName(""), songLength(0), nextNodePtr(nullptr) {}`.

FileEditSelectionViewGoRunTerminalHelp

EXPLORER

YZHU303 [SSH: TURING4]

> .cache

> .conda

> .config

> .cursor-server

> .dotnet

> .local

> .mozilla

> .nv

> .pki

> .ssh

> .subversion

> .vscode

> .vscode-server

> .wakatime

> BigMod

> crc32

CS010C

Lab1

a.out

main.cpp

Playlist.cpp

Playlist.h

Lab2

matrix-multiply-SJZHZ

Optimizing-SGEMM-on-NVIDIA-Turing-GPUs

Reproduce-SGEMM

yuezhu

.bash_history

\$.bash_logout

\$.bash_profile

\$.bashrc

.emacs

\$.gitconfig

.histfile

\$.p10k.zsh

.python_history

.viminfo

\$.wakatime.cfg

.wget-hsts

.z

.zsh_history

\$.zshrc

.zshrc copy

OUTLINE

TIMELINE

main.cpp

Playlist.h

Playlist.cpp

CS010C > Lab1 > Playlist.cpp

1 Press Ctrl+I to ask Gemini Code Assist to help you code. Start typing to dismiss.

PROBLEMS

OUTPUT

TERMINAL

DEBUG CONSOLE

PORTS

zsh - yzhu303

base yzhu303@turing4 11:50:39

SSH: Turing4BigModmain*0028 minsLn 1, Col 1Spaces: 4UTF-8LFC++Linux

Review and Hints

If you've mastered the material from class, you can start now — no need to follow me!

Lab 1

Each use of `std::someFunction` is syntactically correct, theoretically, there's no need to use `using namespace std;` anymore. But **unexpectedly fails** the test in this case!

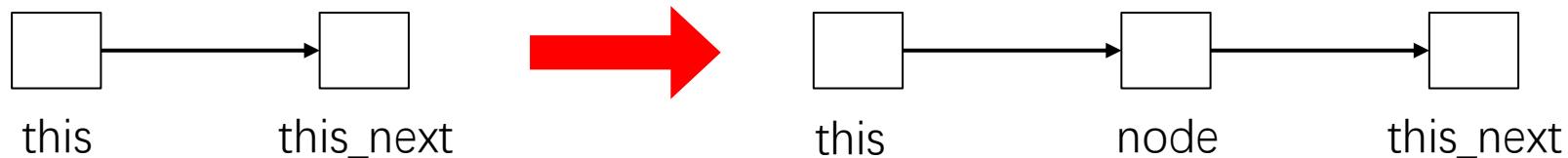
- **Bug:** `using namespace std;` is necessary!
- main.cpp - main() function
 - Complex! (~200 lines)
 - May take several attempts to debug successfully.
- Playlist.h - Class declaration
 - Very simple (~20 lines)
- Playlist.cpp - Class definition
 - Simple (~50 lines)
- Local debugging
 - Compile
 - `g++ main.cpp Playlist.cpp -Wall -o a.out`
 - Run
 - `./a.out`

Playlist.h

- Declaration
 - `someType FunctionName(Some Parameters);`
- public & private member
- constructor
 - Default constructor: `{"none", "none", "none", 0, 0 or nullptr}`
 - Parameterized constructor
- mutator & accessor
 - Setxxx: `void SetXXX(some Parameters);`
 - Getxxx: `someType GetXXX() const;`

Playlist.cpp

- Definition
 - `someType FunctionName(Some Parameters){xxx}`
- `void PlaylistNode::InsertAfter(PlaylistNode *node)`
 - Insert “parameter node” behind “this node”



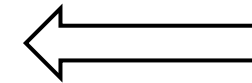
main.cpp

- Framework
- How to handle interactive menus?

```
while (true)
{
```

```
    ...
    char choice = PrintMenu(title);
    switch (choice)
    {
        case '?':
            do_something(parameter);
            break;
        case '?':
            ...
    }
}
```

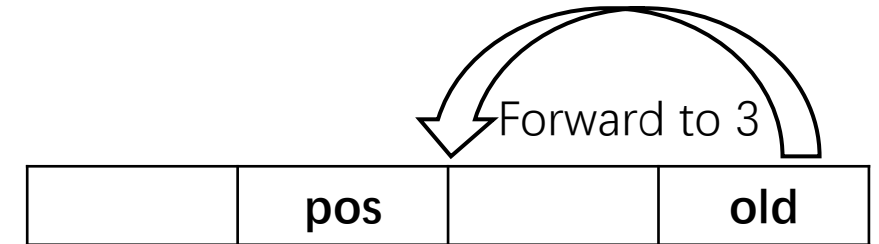
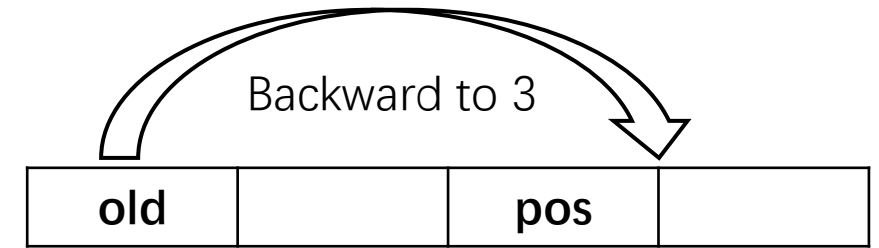
```
6 > char PrintMenu(std::string &t
22 > void Output_full_playlist(stc
39 > void Add_song(PlaylistNode *8
73 > void Remove_song(PlaylistNode
106 > void Change_position_of_song(
150 > void Output_songs_by_artist(F
172 > void Output_total_time(Playli
184
185 > int main() ...
```



Just 1 implementation,
Not necessary to be the same

Chang position of song

- Solution 1
 - Find the corresponding position to insert
 - Changing forward: $k - 1$
 - Changing backward: k
 - move the node directly
- Solution 2 (more intuitive)
 - Extract(remove) the node
 - then find the corresponding position to insert: $k - 1$
- corner case: head
 - new position is 1
 - old position is 1



I/O Hints

- Output: `std::endl` or `"\n"` or `'\n'`

```
while (true)
{
    std::cout << "\n";
    char choice = PrintMenu(title);
    switch (choice)
    ...
}
```

- Input: when it encounters a **blank space**
 - `cin` stops reading
 - `getline` is more suitable for reading a whole line that may contain spaces
 - `std::getline(std::cin, something);`
 - Bug? It's **newline character** when using `getline` after `cin`
 - Ignore that character
 - `std::cin >> something;`
 - `std::cin.ignore();` // Clear the newline character from the input buffer
 - `std::getline(std::cin, somethingelse);`
 - Or read that whitespace first, then get the remain input
 - `std::cin >> something;`
 - `std::getline(std::cin >> std::ws, somethingelse);`
 - Or just always use get line
 - `std::getline(std::cin, something);`

```
a
SD567
I Got The News
Steely Dan
```

AAA↵

BBB↵

cin
↓
AAA↵
← getline

BBB↵