Section 3 - Steam Multiplayer

These are the slides that accompany the Unreal Multiplayer course.

Looking for something, try searching our GitHub repo.

Enjoy your stay!

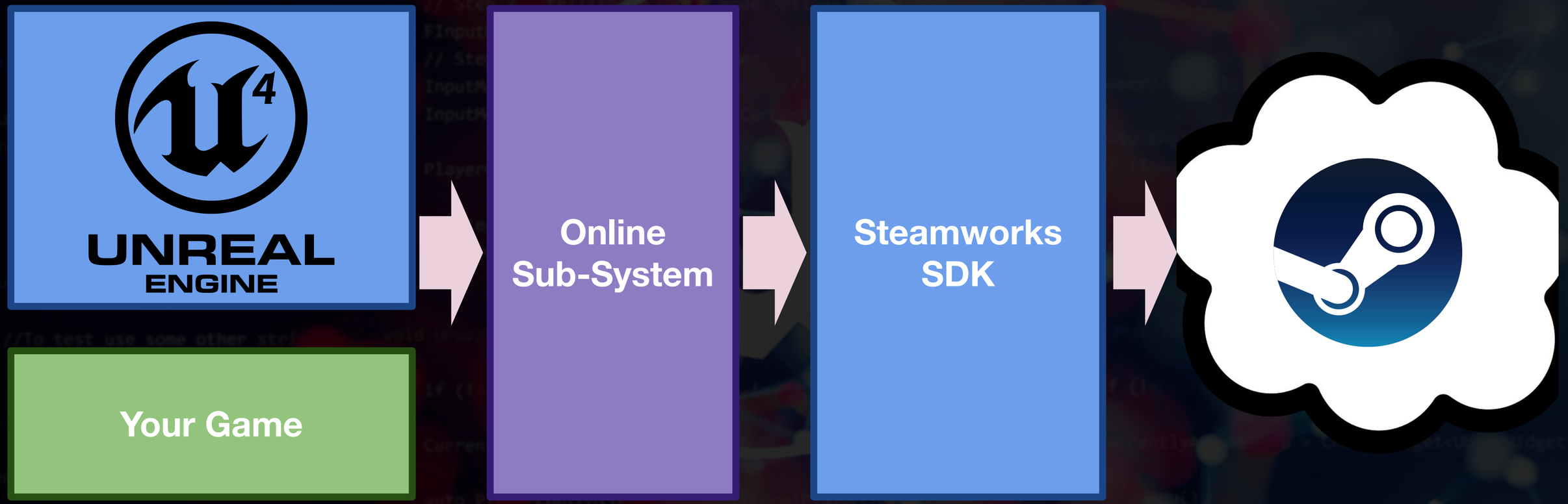
Sam & Ben
GameDev.tv

Live Google Slides at bit.ly/multiplayerslides

Introduction to Steam Multiplayer

Getting the Steamworks SDK

Unreal and Steam



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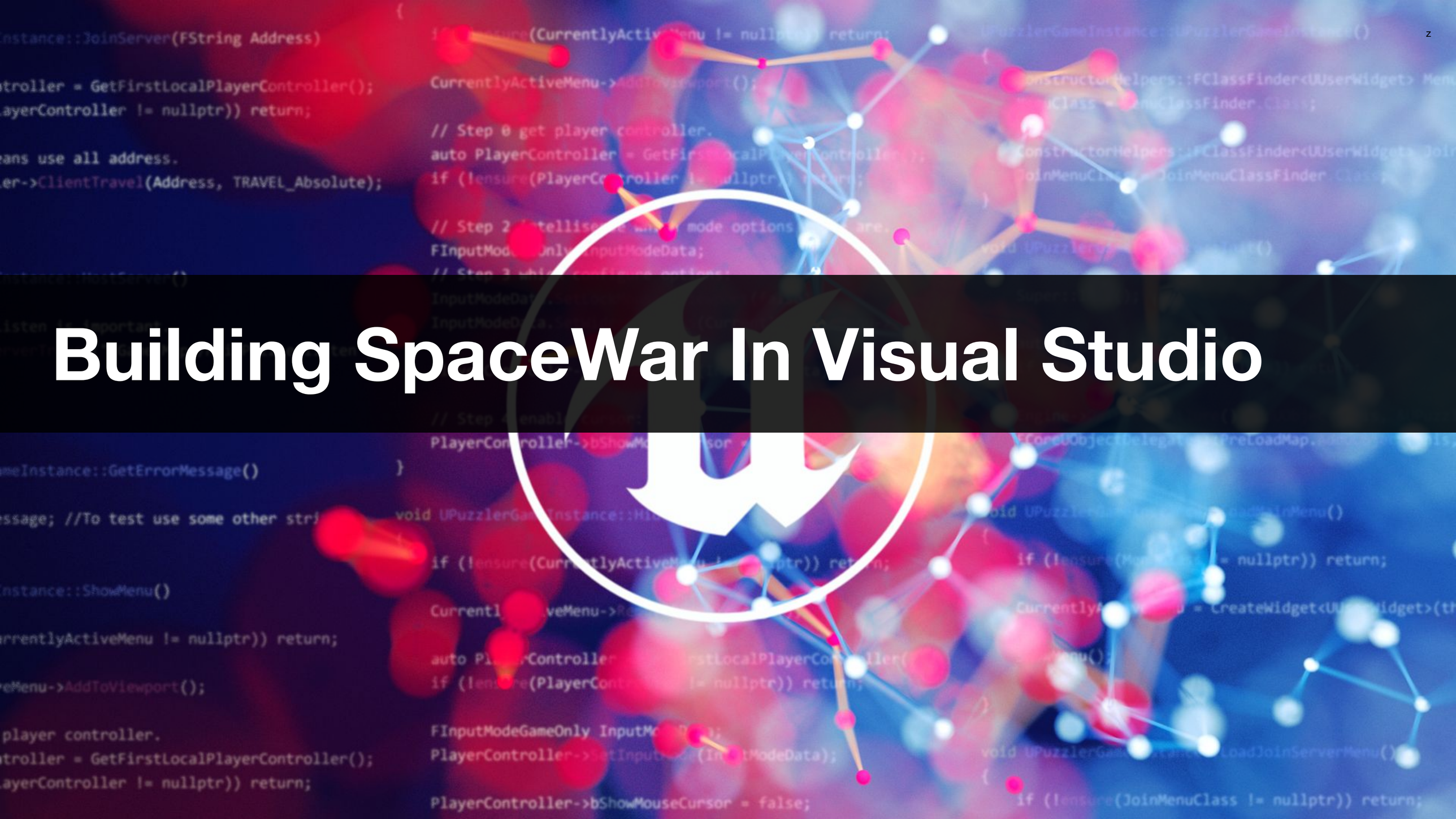
Building SpaceWar In Visual Studio



Get It Running

- Make sure DirectX SDK is installed.
- Find the include and library paths.
- Add to Visual Studio.
- Build and run.

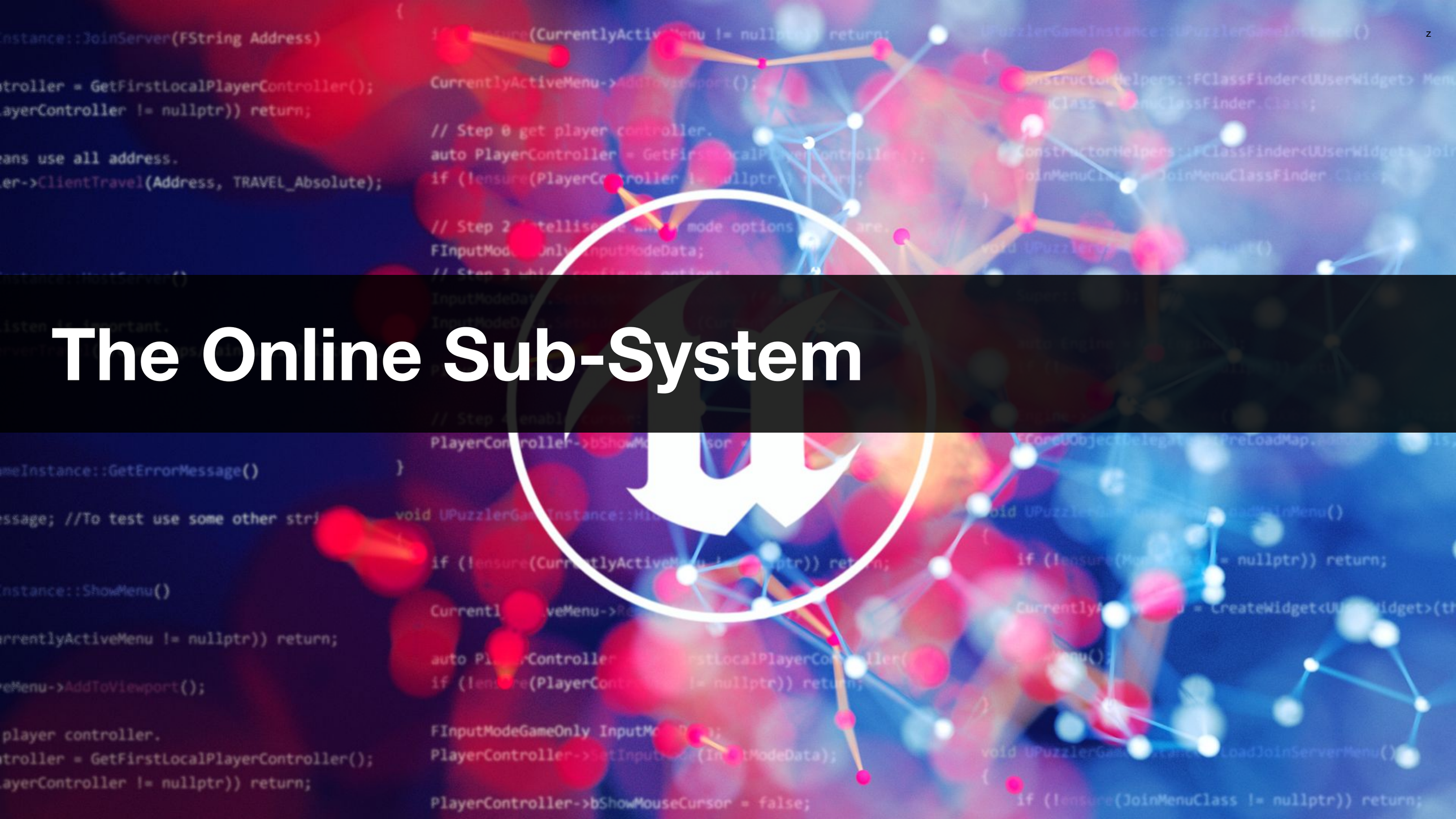
Building SpaceWar In XCode

Testing Steam Lobbies

Find A Test Partner

- Check in with your previous partner.
- Write a post on the forum.
- Respond to posts on the forum.

The Online Sub-System

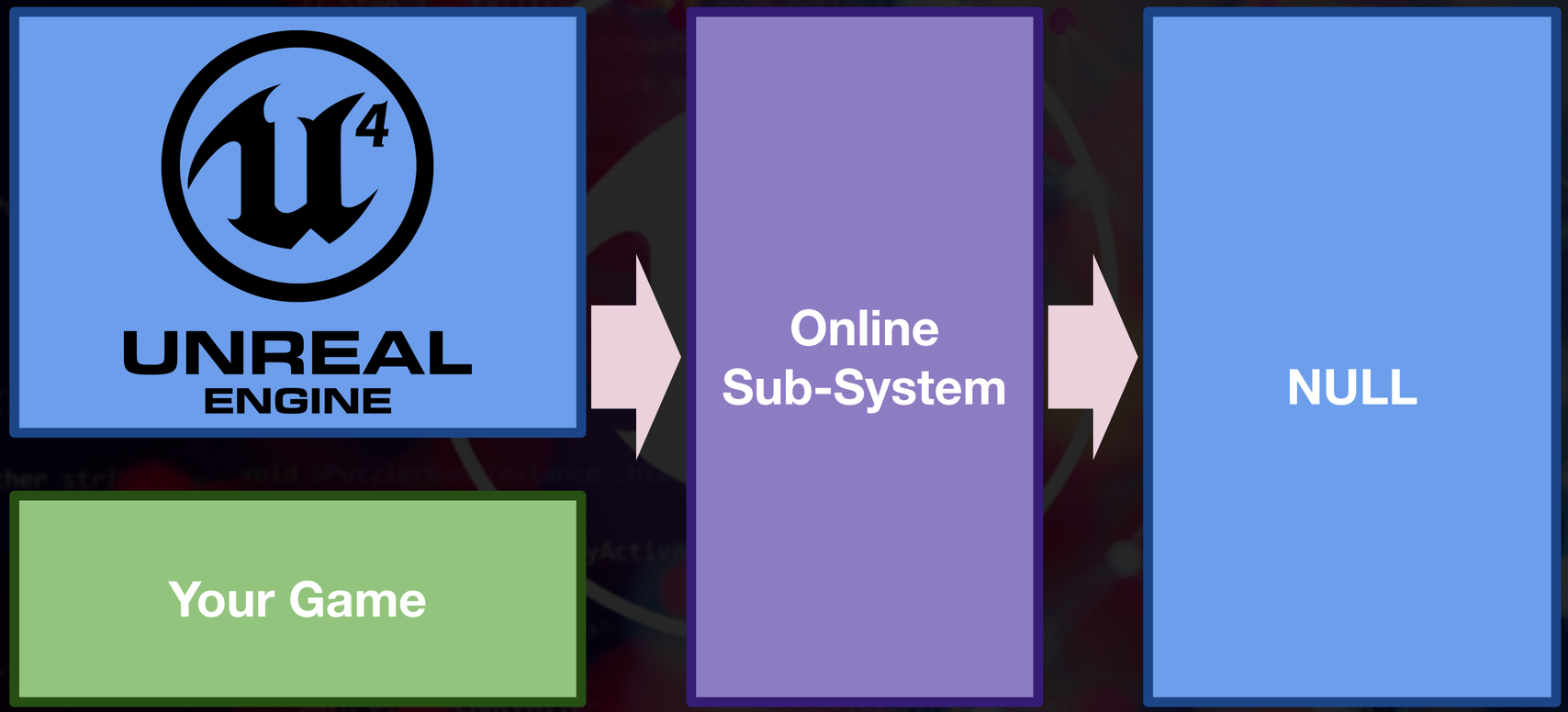


Get The OSS Pointer

- Use the `Get()` static.
- Check for null.
- Print the result.

NULL Sub-System For Testing

Testing The OSS



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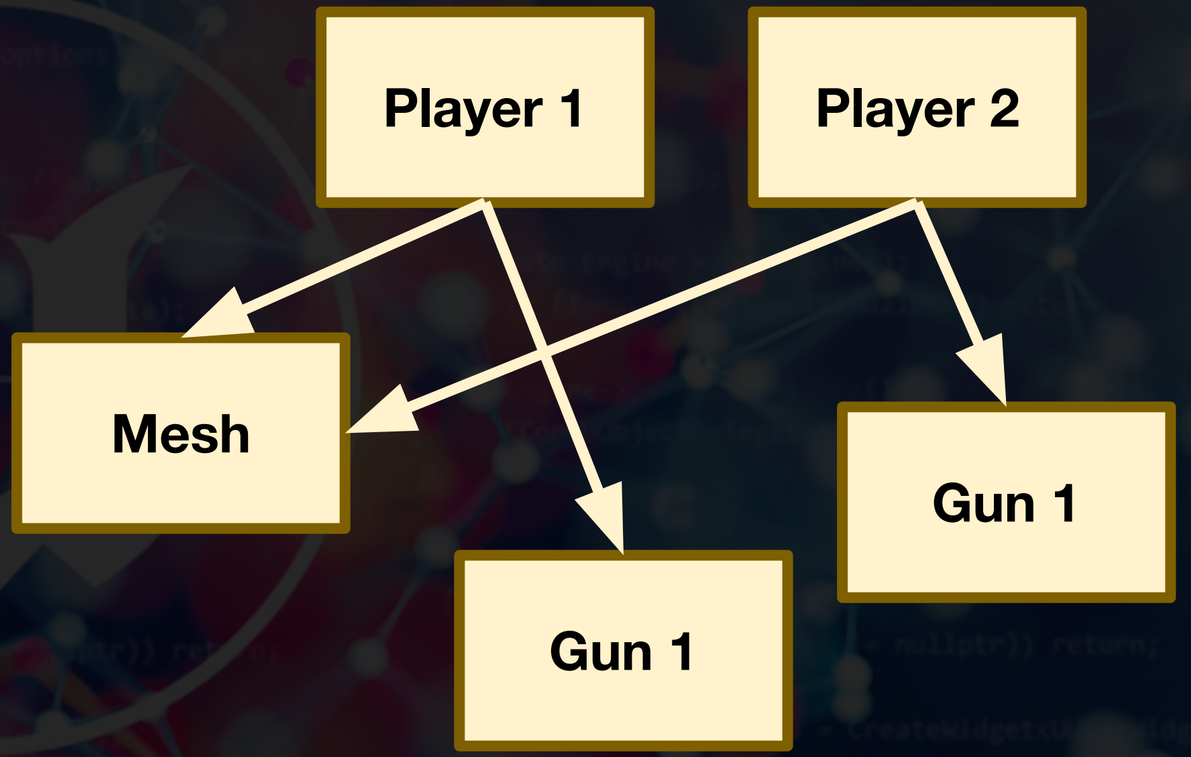
Memory Management In C++

Stack vs Heap



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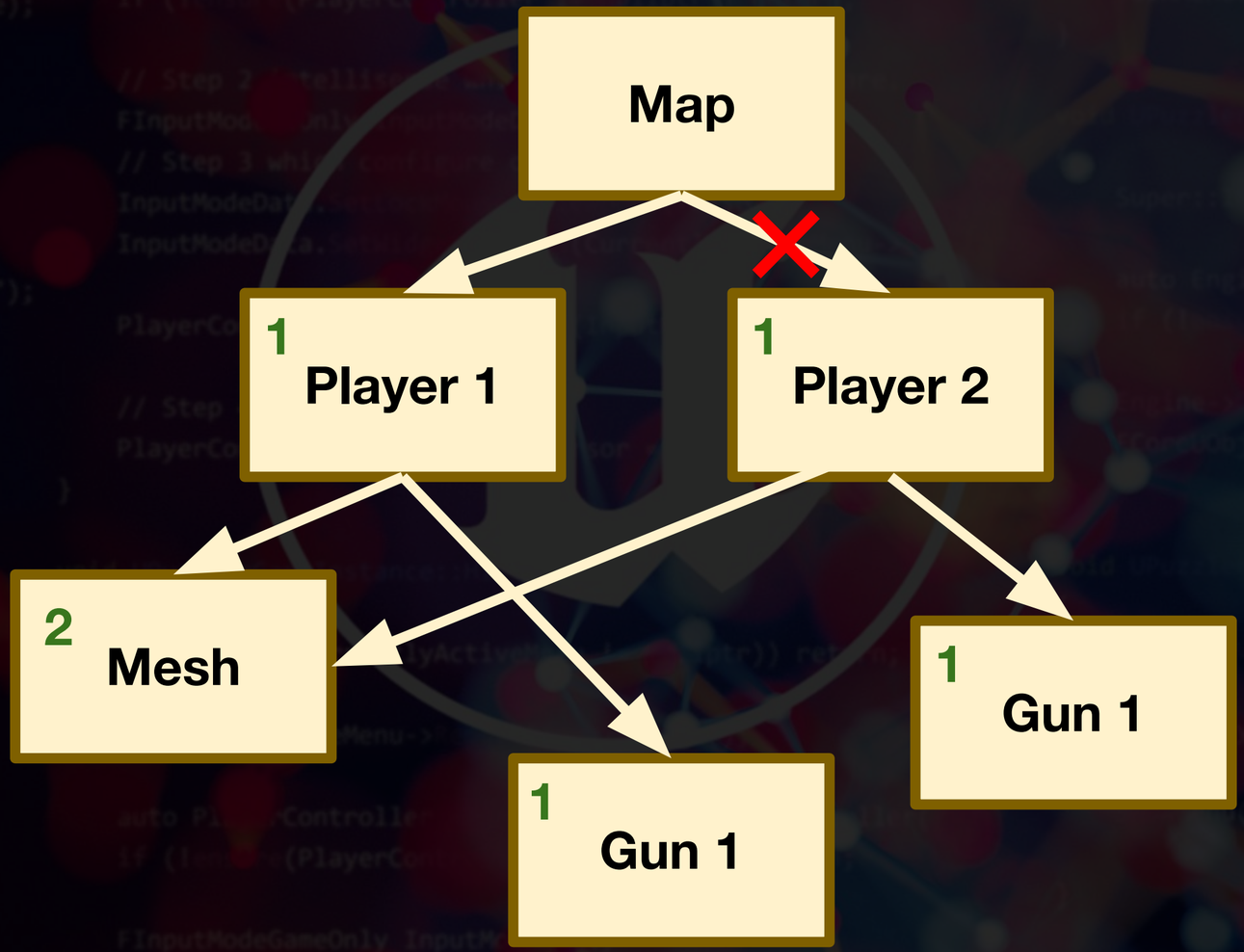
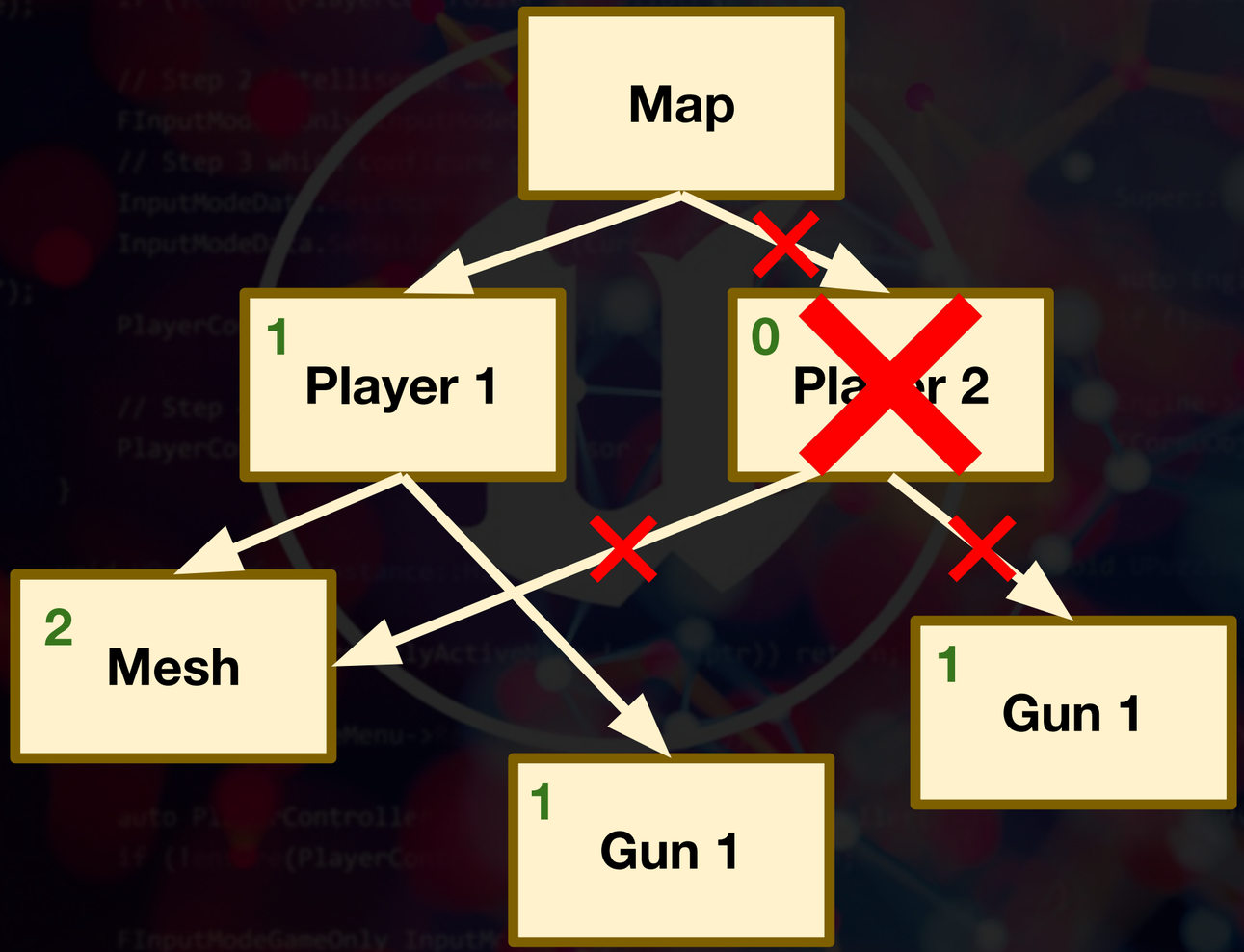
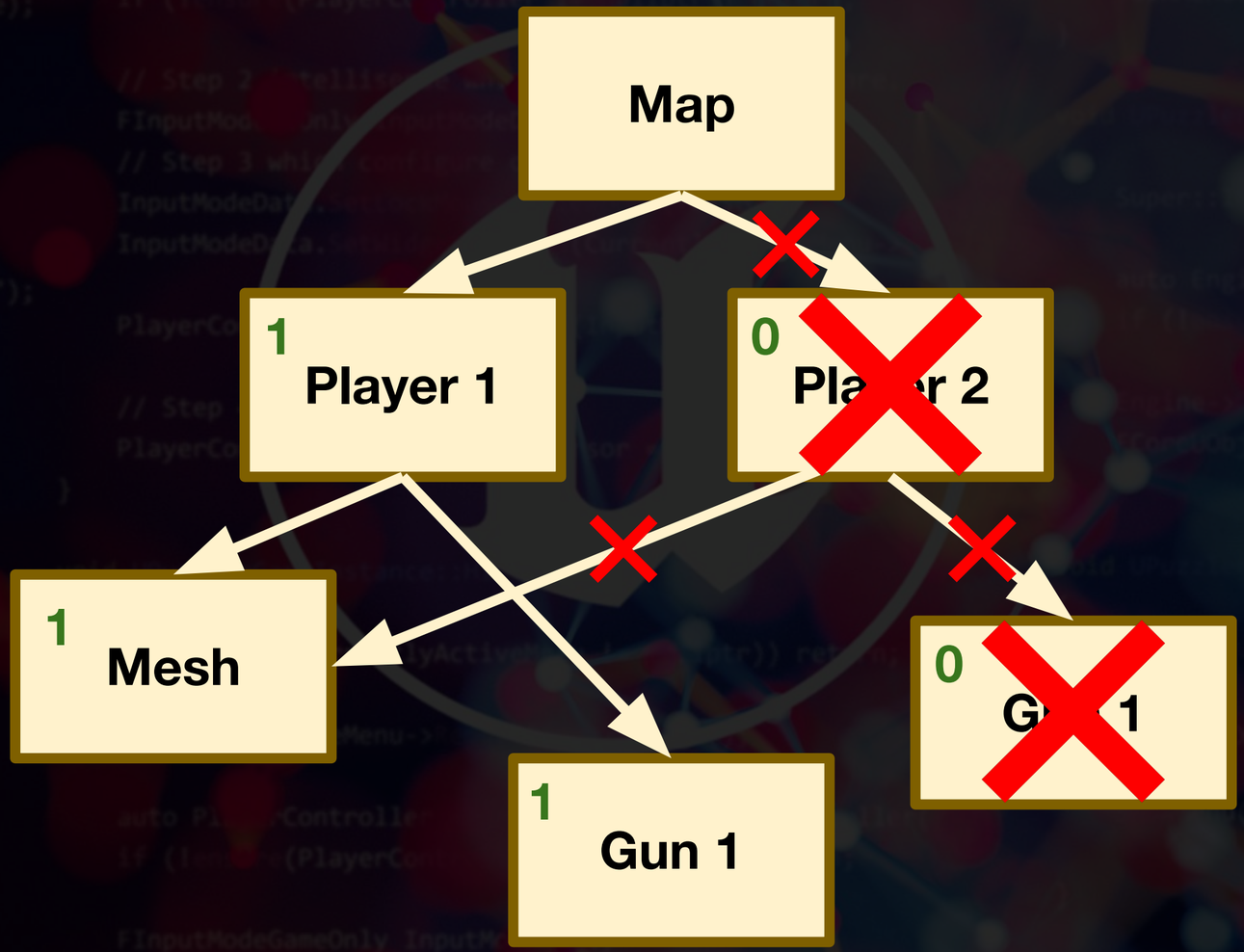
Reference Counting



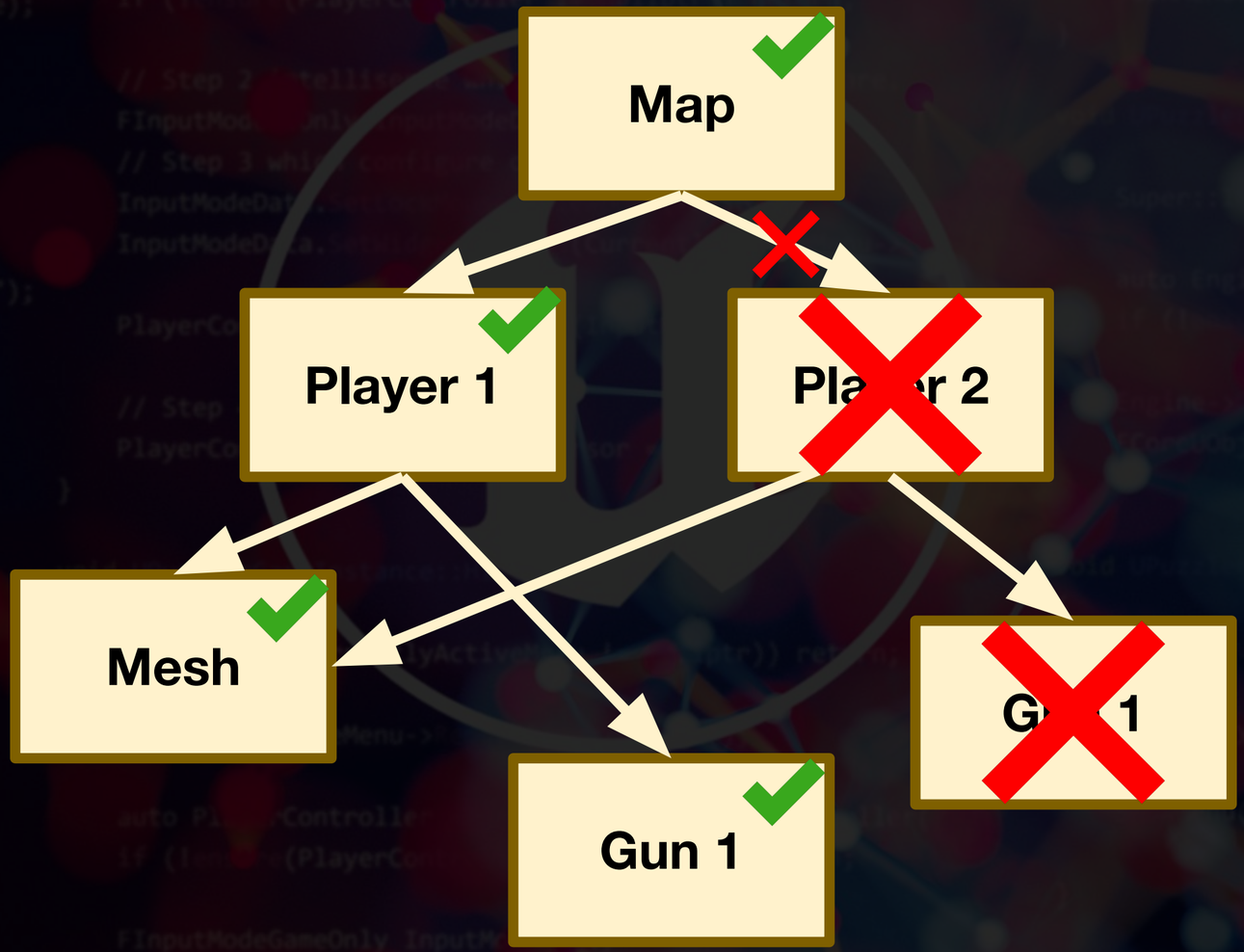
Reference Counting



Reference Counting



Garbage Collection



How Does Unreal Do It?

1. How do we reference count an object?
2. How does Unreal know what objects to scan for garbage collection?
3. How does Unreal know which pointers it should follow?

Reference Counting In Unreal

- Use a `TSharedPtr<AActor>`
- Constructing increments the count
- Destructing decrements the count.

Garbage Collection in Unreal

- All UObjects are automatically in the “set”
- Unreal starts from the “root set”
- Unreal walks all the UProperty pointer
- Any UObject not found can be deleted.

Creating Online Sessions

Create A Session On Host

- Use player zero.
- Use any name for the session.
- Use default settings for now.
- Only go into the game if we succeed.

Destroying Online Sessions

Finding Online Sessions

Print On Find Complete

- Find the type of the delegate.
- Register for callbacks.
- Print and test.

Query Parameters & Session Settings

Print The Sessions Found

- Found session are in the session search.
- Use the TArray docs for iterating.
- What happens if you use default settings.

Lists Of Widgets With ScrollBox

Populate The List

- Create a new C++ widget.
- Create the BP child.
- Create this widget from MainMenu.cpp.
- Add a few test ones as children.

Populating The Server List

Requesting A Refresh

- Add to the MenuInterface.
- Trigger a FindSessions.
- When that returns, set the servers.

Selecting A Server

Set The SelectedIndex

- Handle the button callback
- Call the `SelectIndex()`
- Test the printed value.

Joining A Session

Join A Session

- Handle the join callback.
- Get the connect string.
- Do a ClientTravel.
- Test!

Enabling The Steam OSS

“Presence” For Steam Lobbies

Debug With A Pal

- Go and request a testing buddy.
- Share your repo with them.
- Take it in turns.
- Investigate the logs.
- HINT: The issue is in finding the session.

Row Selection In Lists

Set The Row Colour

- Choose the colours you want
- Consider the states: Hovered and Selected
- How many colours will you need?

Displaying Search Result Properties

Update The UI

- Fill out the rest of the data.
- Bind the necessary components.
- Set the components from the struct.

Debugging The Search Results

Layout The Text

- Equal spacing in each row
- No overlapping
- Add row headers.

Custom Session Settings

Set A Custom Server Name

- Model the UI from the join menu.
- Need to enter name in a text box.
- Send the text value up to create session.

Continued: Custom Session Settings

GameMode And Multiplayer

Counting The Players

- Implement PostLogin and Logout
- Use these methods to count the players
- Log a message when you have 3.
- Where is the GameMode?

Enabling Seamless Travel

Add A Transition Map

- Read the documentation
- Add a custom transition map
- Display “Loading…” text.

Debugging Engine Code

Debug The NULL Subsystem

- Does host or client call RegisterPlayer?
- Does the `NumOpenPublicConnections` decrement?
- If not, why not?

Starting A Session

Start The Game On Timer

- Use the timer manager
- Wait for X players to join
- Get the game starting after Y seconds
- Call `StartSession` on the `SessionInterface`
- Make sure others can’t join.

Handling Network Errors

Steam Multiplayer Wrap-up