

Unique Pointer Exercises

std::unique_ptr

- Briefly describe how std::unique_ptr is implemented
- In terms of memory usage and efficiency, how does unique_ptr compare to traditional pointers?

std::unique_ptr and RAII

- Explain how unique_ptr follows the principles of RAII

unique_ptr initialization

- Write a simple program that creates and initializes a unique_ptr object and performs some operations on it
- What changes would you need to make your program compile under C++11?
- (Optional) Put your compiler into C++11 mode and check your answer to the previous question

unique_ptr as Function Argument

- How can a `unique_ptr` be passed as a function argument?
- Write a simple function that takes a `unique_ptr` argument
- Write a simple program to test your function

Returning `unique_ptr` from Function

- What happens when a `unique_ptr` is returned from a function?

Returning `unique_ptr` from Function

- What are the advantages of returning `unique_ptr` instead of a traditional pointer?

Returning unique_ptr from Function

- Write a function which creates a unique_ptr local variable which is returned by the function
- Write a program that calls the function and prints out the data in the returned object