

# Modern C++ Overview

## Part Three Exercises

# lvalue and rvalue

- Explain briefly what is meant by the terms "lvalue" and "rvalue" in C++
- Give some examples

# lvalue and rvalue references

- Explain briefly what is meant by the terms "lvalue reference" and "rvalue reference"

# Rvalue reference

- Write a function which has an rvalue reference as argument
- Write a program which calls this function, passing an rvalue to it
- Alter your program so that it passes an lvalue to it
- Explain your results

# std::move

- Modify your program from the previous slide so that it works when passing an lvalue
- What implications does this have?

# Pass by value... or by move?

- Write a function which takes a vector of `std::string` by value and prints out the number of elements in the vector
- Write a program which creates a vector of `std::string` and passes it to the function. Print out the number of elements in the vector before making the call and after returning from it
- Modify your program so that the vector is passed as an rvalue

# Pass by value... or by move?

- Explain your results