The Auto Keyword Solutions

auto

- What is meant by "auto" in Modern C++?
  - When we define a variable, we can write "auto" instead of the type, and the compiler will deduce the variable's type from the initial value
- Why is auto important?
  - Auto allows us to write simpler definitions of variables with complex types
  - Auto allows us to define variables whose type cannot be known by us, or is difficult to discover
- Write a program which defines variables using "auto". Print out the values of the variables

Using auto to simplify your code

- Use auto to write down a simpler version of the following definition

  vector<int>::iterator it = vec.begin();

  - Replace the type by "auto" and the compiler will deduce the type automatically

  auto it = vec.begin();

auto with qualifiers

- Write a program which defines a variable which is a reference to const int

- Using auto, define another variable which is initialized from this variable

- Demonstrate that the auto variable is not const

- Attempt to modify the auto variable. Explain your results
  - The auto variable can be modified
  - This is because "auto" discards const and reference qualifiers
  - If we add these to the definition of the auto variable, then it cannot be altered