

# Move Semantics Solutions

# Value Semantics

- Give some situations which typically involve copying in C++
  - Passing an argument by value
  - Returning from a function by value
  - Populating standard containers

# Value Semantics

- Why are these copy operations considered undesirable?
  - Copying can create a lot of overhead
  - e.g. vector of strings - allocate new memory buffer for vector, allocate new memory buffer for each string, copy data into each string, copy each string into vector
  - If the copied object will not be used again, this overhead is wasteful and inefficient

# Value Semantics

- Does traditional C++ provide anything to reduce the copying overhead?
  - Copy elision when returning local variables or temporary objects from function calls

# Move Semantics

- Describe what happens what the following operations are performed:
  - Copying - A copy of the source's data is made and used to populate the target
  - Swapping - the source and the target exchange their data without copying
  - Moving - the source's data is transferred to the target without being copied