

Stream Iterators Solutions

Stream Iterators

- What is meant by a stream iterator?
 - An iterator which is associated with either an input stream or an output stream
- Which stream iterators are provided by the C++ Standard Library?
 - `istream_iterator` for input streams
 - `ostream_iterator` for output streams

ostream_iterator

- How can we create and use an instance of an ostream iterator?
 - Instantiate it with the data type as the parameter
 - Pass the associated output stream as argument
 - Assigning through the iterator will push data onto the stream
- Write a simple program that uses an ostream iterator to display a series of numbers, each on a separate line

istream_iterator

- Describe how to create and use an instance of an istream iterator
 - Instantiate it with the data type as the parameter
 - Pass the associated input stream as argument
 - Dereference the iterator to read the from the stream's current position
 - Increment the iterator to move the stream's marker to the next position
- Write a simple program that uses an istream iterator to read in a number from the keyboard, then prints it out

istream_iterator loops

- When using an `istream_iterator` in a loop to read input, how do we know when to stop?
 - The iterator will be empty where there is no more input to read
 - We can detect the end of input by comparing our iterator against an empty iterator
 - We can create an empty iterator by not binding it to any stream
- Write a simple program that uses an `istream` iterator to read in a series of numbers from the keyboard into a vector, then prints out the contents of the vector