

## CS 173 Two-Way List Position Lab

Write a C++ template including a header file and the corresponding source file to allow a user to create two way lists containing whatever entry type the user needs. Abstractly, the user can reason about the list as a pair of strings. For example, if the entry type is char, a list might look like `d q c, r b n x`. The first part of the pair, `d a c`, is called the preceding. This example will be used to illustrate the functions described. The current position is to the right of the comma, looking at the `r`. The functions provided for the client should include:

- a constructor
- `insert`: permit a new entry into the list at the current position. For example, in the above list position, if the client wants to insert `m`, the new list position would look like `d q c, m r b n x`.
- `remove`: return the data from the entry at the current position. The new list would look like `d q c, b n x`.
- `advance`: move one position to the right. `d q c r, b n x`.
- `retreat`: move one position to the left. `d q, c r b n x`
- `length of remainder`: return the length of the remainder of the list. 4.
- `reset`: move to the front of the list. `, d q c r b n x`.
- `peek`: returns the data from the current position and leaves the list as it was. `d q c, r b n x`

Write a contract to serve as both an advertisement telling what your software will do and as an agreement between you and the client purchaser promising what your software will deliver.