Question 13

In this question, the way I chose to implement the solution is by creating two doubly liked lists.

The node class, which is created as a template to accommodate any type, has two pointers, next and prev. One pointer pointing to the next node, and a pointer from the next node pointing back to the previous node. In addition, we also created “info” of type T to hold the information of each node.

In the linked list class, also a template, we have a few functions that are useful to implement this solution.

There is the default constructor, setting the initial list to null (an empty list)

The print function, which iterates through the linked list and prints out the information (in our case the worker’s names, and the job title)

The insert node function takes a node and adds it to the list, and that is how we build our list up, by adding more and more nodes.

The shift function takes care of the case of If there is a problem with the assignment or a worker is dissatisfied with their job. In that case, we shift the list in order to reassign the worker names to new jobs. This is done by simply taking the last node and attaching it to the front of the list.

The function length just returns the length of a linked list

The function IsEmptyList, checks if a list is empty