Lab 05 - Nodes Problems

Direction: Submit typed work in the Labs directory of your github repositor or dropbox, or upload to the google classroom assignment. Each part should be a separate files. The files named should be `"lab5A.cpp"` and `"lab5B.cpp"` respectively.

Part A: In class

Your objective is to write the definition of the function `Average()` whose header is

```
double Average(Node<double>* root)
```

It returns the average of the values from the singly linked list referenced by *root*. If *root* is referencing an empty list, the function returns 0.

Part B: Take home

Your objective is to write the definition of the following functions

☐ the function `FrontAppend()` whose header is

```
template <typename T>
void FrontAppend(Node<T>*& data,Node<T>* addon)
```

It appends the linked list referenced by *addon* to the beginning of the linked list referenced by *data*. For instances, if $data = [a, b, c, d, e]$ and $addon = [f, g, h, i, j]$; then after the call of the function, $data = [f, g, h, i, j, a, b, c, d, e]$.

☐ the function `LessThan()` whose header is

```
bool LessThan(Node<bool>* op1,Node<bool>* op2)
```

Given that *op1* and *op2* references doubly linked lists that represent binary numbers, the function returns true if the list referenced by *op1* is less than the list referenced by *op2*. For instances, if $op1 = [0, 0, 1, 1, 0]$ and $op2 = [1, 0, 0, 1]$, the function will return true. Do not assume that the lists are the same size.