

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 `MidAppend()` whose header is

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

It appends the linked list referenced by `addon` to the linked list referenced by `data` starting after the middle node of `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` = [a, b, f, g, h, i, j, c, d, e].

- ☐ the function `NotEqual()` whose header is

```
bool NotEqual(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 not equal 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.