CS 2341 – Fall 2020

**Homework Assignment 3**

Due: Sep 30, 2020 @ 11pm

Uploaded to Canvas

Submission Directions:

* Put your name inside the document in the header of the Word doc (or some equally

conspicuous place)

* Complete the questions below. Point values are indicated in square brackets.
* For questions that require diagrams, create the diagrams on your computer (no hand-

drawn/scanned diagrams). You can do this with PowerPoint, Google Draw, LibreOffice Draw, etc. Then copy-and-paste the diagrams into the correct place in the document you submit.

* For any code or pseudocode, please use a fixed-point mono font (courier for example) and consider appropriate spacing and indentation.
* Please **submit a PDF** file of your solutions.

class ListNode {

public:

 int data;

 ListNode\* next;

};

class LinkedList {

private:

 ListNode\* front;

public:

 //other functions

};

1. Using the linked list and list node classes above, add a member function that will return the sum of all nodes in the list. An empty list should return 0.

2. Using the linked list and list node classes above, write a recursive member function to print the elements of the list in reverse order.

3. Using the list of numbers below, show the steps used by Selection Sort to order the values in ascending order.

19 22 9 7 5 12 10 18 24

4. Using the list of numbers from question 3, what **value** would be selected as initial pivot using median-of-3 selection strategy?

5. Show that T(n) = 4n2+3n+10 is in O(n2).