Activity 10

Comp 11 - Summer Session — Pointer to Pointers

With a partner (or two), discuss the following code sample and answer the questions below. The instructor and teaching assistants will let you discuss and then be around to answer questions.

10.1 Description

In order to prepare for lab, we are going to take a look at a singly linked-list. That is, a struct that has pointers in it that points to another piece of data of the same type.

```cpp
#include <iostream>
#include <string>

struct Student{
    // Stores a pointer to the next student
    Student* next;

    // Our regular member variables
    std::string name;
    int age;
};

int main()
{
    Student* mike = new Student;
    Student* susan = new Student;
    Student* nick = new Student;

    mike->next = susan;
    susan->next = nick;
    nick->next = NULL;

    return 0;
}
```

1Activities do not need to be returned to instructors, they are for your benefit.
10.2 Questions

1. What does new do? Where does it allocate memory (heap or stack?)

2. When do we use delete versus delete[]?

3. Draw a linked-list for the above data structure (on a piece of paper or on the chalk board). That is, draw a few nodes, and then also draw a NULL node.

4. When this program ends, will it create a memory leak?