

OOP244 Breakout Room: Practice Problem (Week 2)

Q1. Complete the following C++ program such that it will do the following tasks:

1. Prompt the user to enter a string (30 characters maximum).
2. Allocate memory to store the string entered by the user.
3. Store the string in the memory.
4. Display the string that is stored in the memory.
5. Deallocate the memory storage.

Here is a skeleton of the C++ program

```
// TO DO
```

```
const int MAX=30;
```

```
int main() {
    char InputString[???]; // TO DO
    cout << "Please enter a string ("
            << MAX << "characters max):" << endl;
    cin >> InputString;

    // TO DO

    return 0;
}
```

Q2. Add more code to the C++ program to do the following tasks.

1. Prompt the user about the total number of **integers** one is going to enter.
2. Allocate memory to store all those integers.
3. Ask the user to enter all the integers and store them in the memory that has been allocated.
4. Display the sum of all the integers that are stored in the memory.
5. Allocate memory to store your full name.
6. Store your full name and then display it. (Note: Do not use cin.)
7. Deallocate all the memory storage. (Note: Be careful!)

Here is a snippet of C++ code that you may use.

```
int count=0, number;
cout << "How many integers are you going to enter? >>> ";

cin >> number;
```

Q3. DO IT AT HOME!

Use **valgrind** (on **matrix**) to check if your C++ program has memory leaks!