Assignment 10

Read the marks obtained by students of second year in an online examination of a particular subject. Find the maximum and minimum marks obtained in that subject using Heap data structure. Analyze the algorithm.

```cpp
#include <iostream>

#include <vector>

#include <queue> // For priority_queue


using namespace std;


int main() {

    int n;

    cout << "Enter number of students: ";

    cin >> n;


    // Declare min-heap and max-heap

    priority_queue<int> maxHeap; // max-heap (default)

    priority_queue<int, vector<int>, greater<int>> minHeap; // min-heap


    cout << "Enter marks obtained by each student:\n";

    for (int i = 0; i < n; ++i) {

        int mark;

        cin >> mark;

        maxHeap.push(mark);

        minHeap.push(mark);

    }


    // Get maximum and minimum from top of heaps

    int maxMarks = maxHeap.top();

    int minMarks = minHeap.top();


    cout << "\nMaximum Marks: " << maxMarks << endl;

    cout << "Minimum Marks: " << minMarks << endl;
```
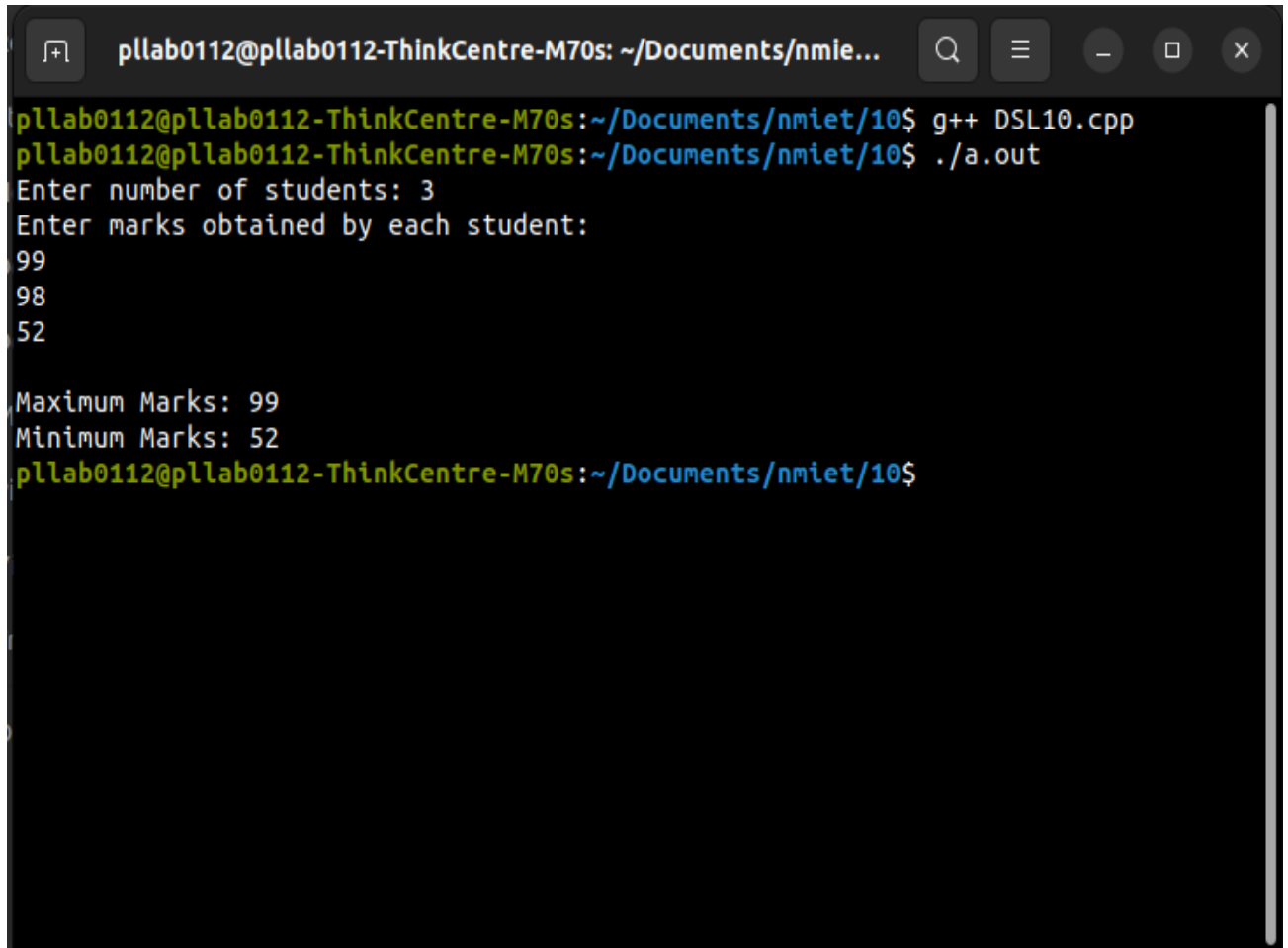
```
    return 0;

}
```

//OUTPUT


```
pllab0112@pllab0112-ThinkCentre-M70s:~/Documents/nmiet/10$ g++ DSL10.cpp
pllab0112@pllab0112-ThinkCentre-M70s:~/Documents/nmiet/10$ ./a.out
Enter number of students: 3
Enter marks obtained by each student:
99
98
52

Maximum Marks: 99
Minimum Marks: 52
pllab0112@pllab0112-ThinkCentre-M70s:~/Documents/nmiet/10$
```