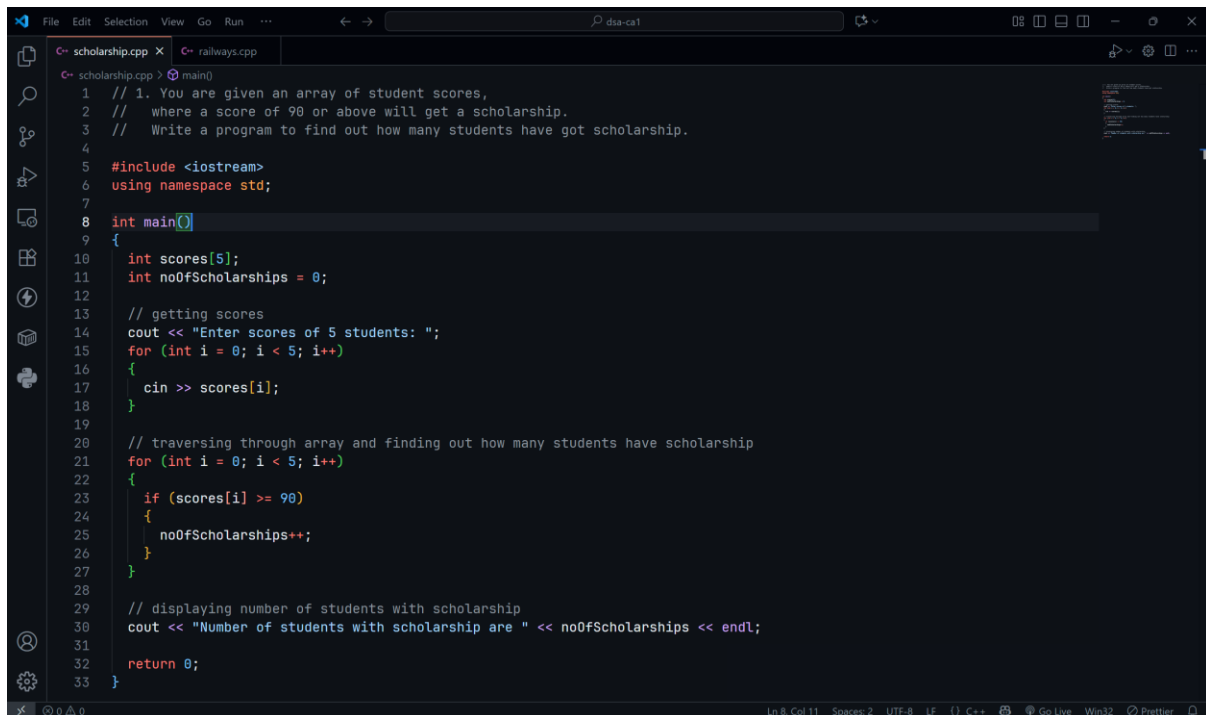


CAP 282: Data Structures – Laboratory

Academic Task	Practical CA-1
Date	24-09-2025
Name	Mona Raj
Roll no.	39
Section	D2404
Group	02

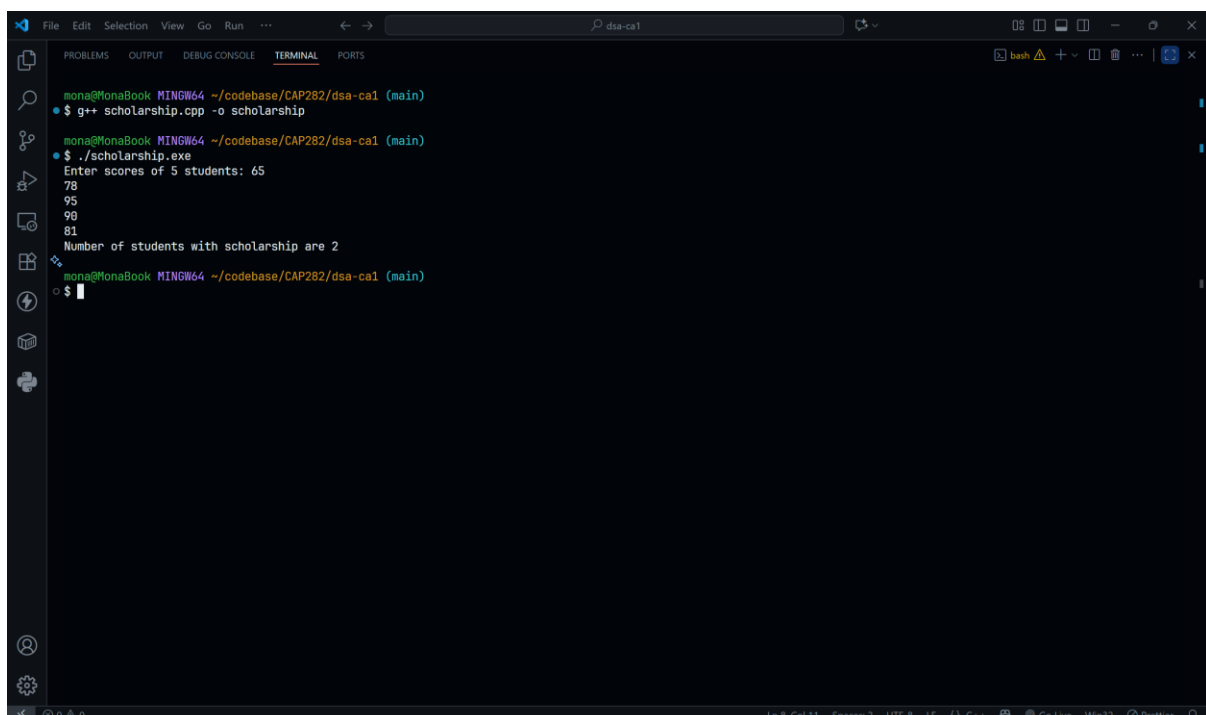
Question 1: You are given an array of student scores, where a score of 90 or above will get a scholarship. Write a program to find out how many students have got scholarship.

Code Screenshots:



```
1 // 1. You are given an array of student scores,
2 // where a score of 90 or above will get a scholarship.
3 // Write a program to find out how many students have got scholarship.
4
5 #include <iostream>
6 using namespace std;
7
8 int main()
9 {
10     int scores[5];
11     int noOfScholarships = 0;
12
13     // getting scores
14     cout << "Enter scores of 5 students: ";
15     for (int i = 0; i < 5; i++)
16     {
17         cin >> scores[i];
18     }
19
20     // traversing through array and finding out how many students have scholarship
21     for (int i = 0; i < 5; i++)
22     {
23         if (scores[i] >= 90)
24         {
25             noOfScholarships++;
26         }
27     }
28
29     // displaying number of students with scholarship
30     cout << "Number of students with scholarship are " << noOfScholarships << endl;
31
32     return 0;
33 }
```

Execution Screenshots:



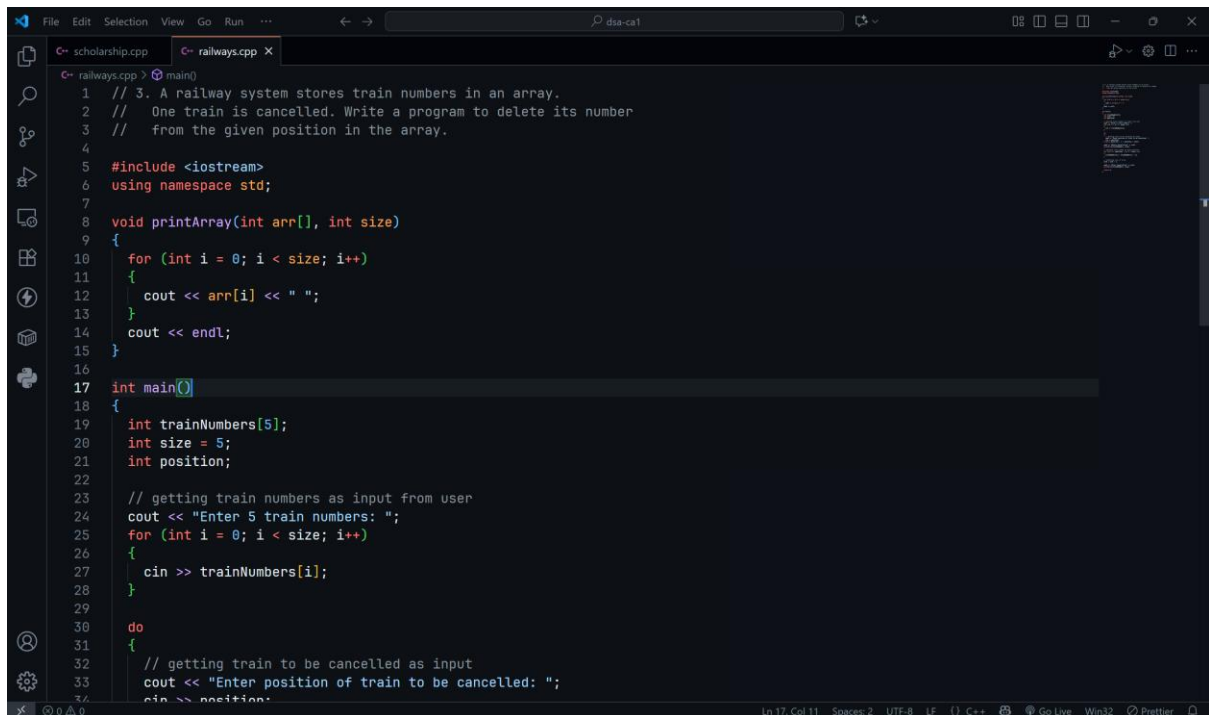
```
mona@MonaBook MINGW64 ~/codebase/dsa-ca1 (main)
$ g++ scholarship.cpp -o scholarship

mona@MonaBook MINGW64 ~/codebase/CAP282/dsa-ca1 (main)
$ ./scholarship.exe
Enter scores of 5 students: 65
95
90
81
Number of students with scholarship are 2

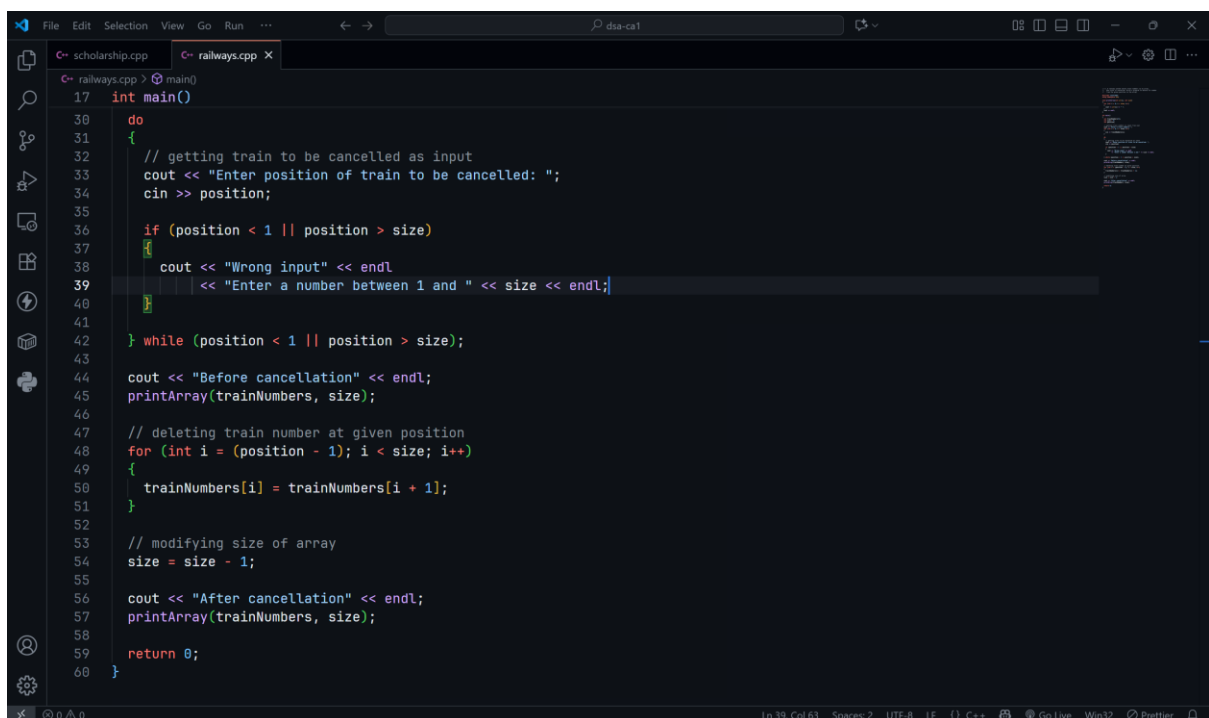
mona@MonaBook MINGW64 ~/codebase/CAP282/dsa-ca1 (main)
$
```

Question 2: A railway system stores train numbers in an array. One train is cancelled. Write a program to delete its number from the given position in the array.

Code Screenshots:

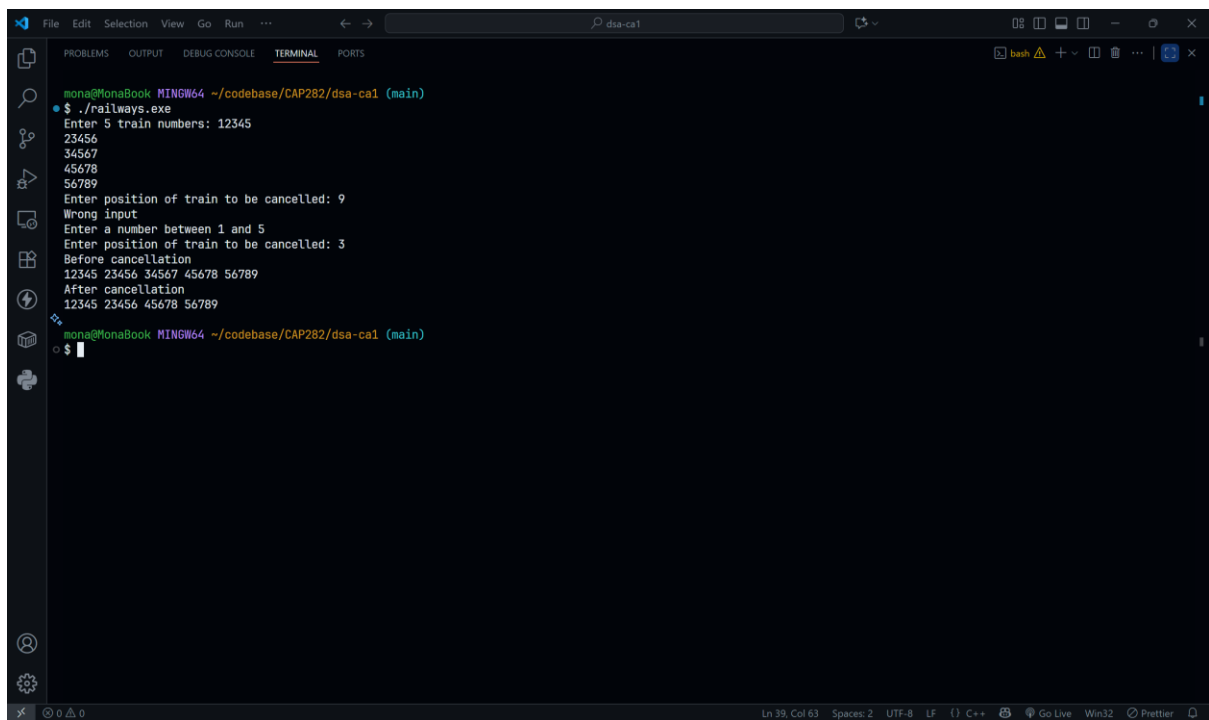


```
1 // 3. A railway system stores train numbers in an array.
2 // One train is cancelled. Write a program to delete its number
3 // from the given position in the array.
4
5 #include <iostream>
6 using namespace std;
7
8 void printArray(int arr[], int size)
9 {
10     for (int i = 0; i < size; i++)
11     {
12         cout << arr[i] << " ";
13     }
14     cout << endl;
15 }
16
17 int main()
18 {
19     int trainNumbers[5];
20     int size = 5;
21     int position;
22
23     // getting train numbers as input from user
24     cout << "Enter 5 train numbers: ";
25     for (int i = 0; i < size; i++)
26     {
27         cin >> trainNumbers[i];
28     }
29
30     do
31     {
32         // getting train to be cancelled as input
33         cout << "Enter position of train to be cancelled: ";
34         cin >> position;
```



```
35
36     if (position < 1 || position > size)
37     {
38         cout << "Wrong input" << endl;
39         cout << "Enter a number between 1 and " << size << endl;
40     }
41     while (position < 1 || position > size);
42
43     cout << "Before cancellation" << endl;
44     printArray(trainNumbers, size);
45
46     // deleting train number at given position
47     for (int i = (position - 1); i < size; i++)
48     {
49         trainNumbers[i] = trainNumbers[i + 1];
50     }
51
52     // modifying size of array
53     size = size - 1;
54
55     cout << "After cancellation" << endl;
56     printArray(trainNumbers, size);
57
58     return 0;
59 }
60 }
```

Execution Screenshots:



```
mona@MonaBook MINGW64 ~/codebase/CAP282/dsa-ca1 (main)
$ ./railways.exe
Enter 5 train numbers: 12345
23456
34567
45678
56789
Enter position of train to be cancelled: 9
Wrong input
Enter a number between 1 and 5
Enter position of train to be cancelled: 3
Before cancellation
12345 23456 34567 45678 56789
After cancellation
12345 23456 45678 56789
mona@MonaBook MINGW64 ~/codebase/CAP282/dsa-ca1 (main)
$
```