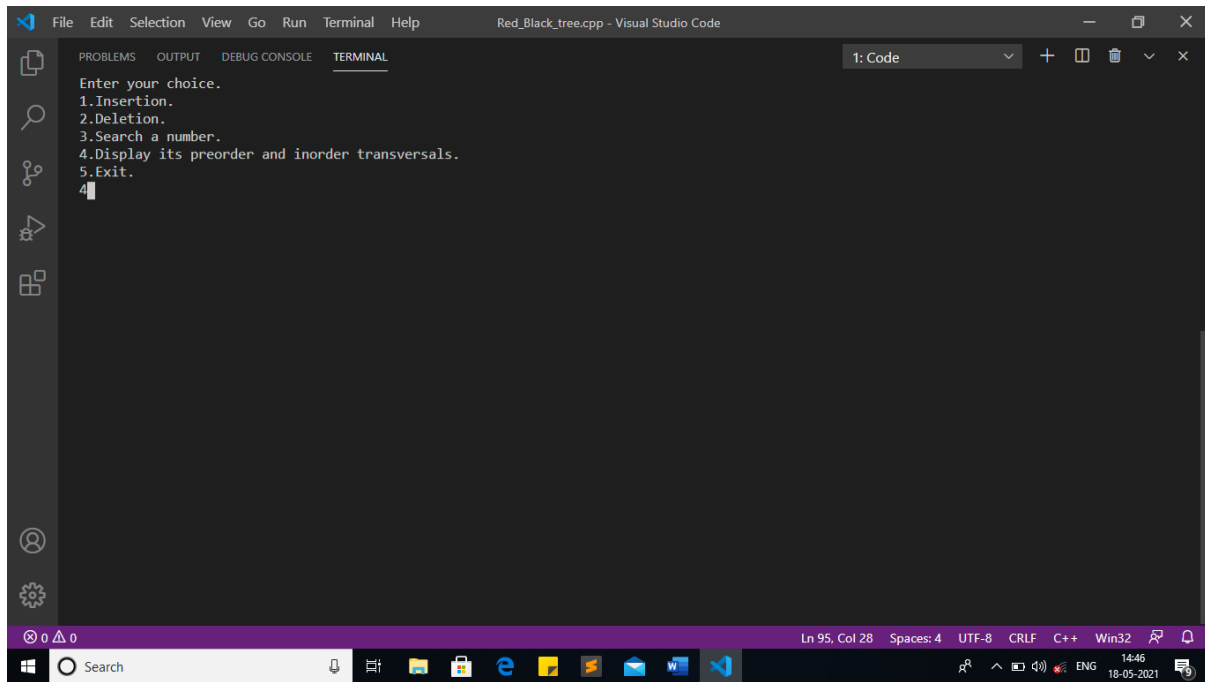


YASHANG SINGH
2019/1453

QUESTION.1



The screenshot shows the Visual Studio Code interface with a terminal window open. The terminal displays a menu for a Red-Black tree program. The menu options are:

- Enter your choice.
- 1.Insertion.
- 2.Deletion.
- 3.Search a number.
- 4.Display its preorder and inorder transversals.
- 5.Exit.

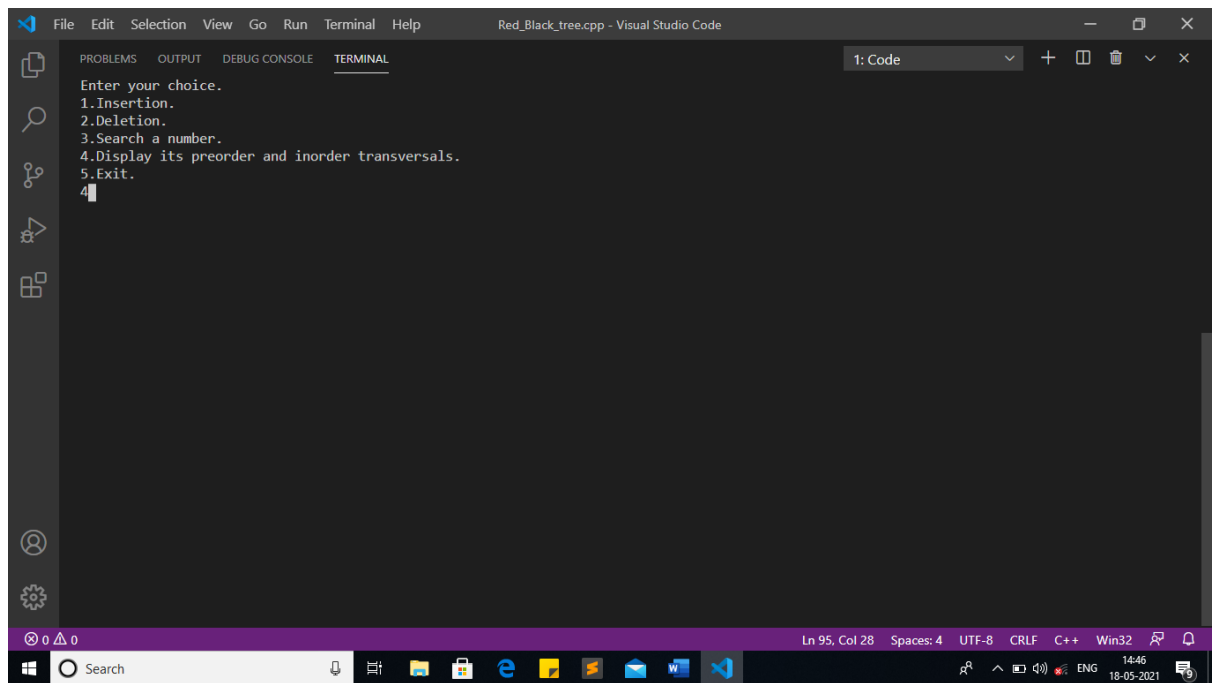
The user has entered the number '4' at the prompt.

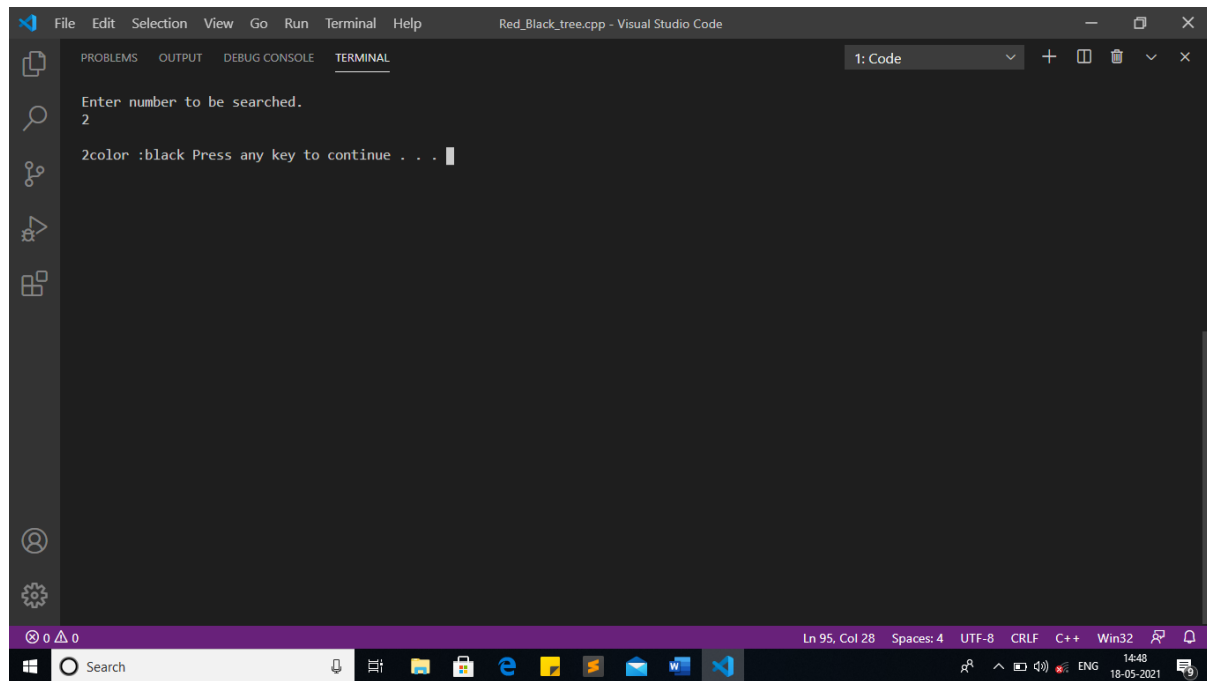
```
1: Code
Enter your choice.
1.Insertion.
2.Deletion.
3.Search a number.
4.Display its preorder and inorder transversals.
5.Exit.
4
```

The status bar at the bottom indicates the file is 'Red_Black_tree.cpp', the editor is in 'C++' mode, and the window title is 'Win32'. The system tray shows the date and time as '14:48 18-05-2021'.

The screenshot shows the Visual Studio Code interface with the 'Terminal' tab active. The terminal output displays the results of a preorder and inorder traversal of a binary tree. The preorder traversal results are: Element: 2 (Black), Element: 1 (Black), Element: 3 (Black), and Element: 4 (Red). The inorder traversal results are: Element: 1 (Black), Element: 2 (Black), Element: 3 (Black), and Element: 4 (Red). The terminal prompt 'Press any key to continue . . .' is visible at the end of the output.

```
File Edit Selection View Go Run Terminal Help Red_Black_tree.cpp - Visual Studio Code
1: Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Preorder:
Element: 2      Color: Black
Element: 1      Color: Black
Element: 3      Color: Black
Element: 4      Color: Red
Inorder:
Element: 1      Color: Black
Element: 2      Color: Black
Element: 3      Color: Black
Element: 4      Color: RedPress any key to continue . . .
Ln 95, Col 28 Spaces: 4 UTF-8 CRLF C++ Win32 14:46 18-05-2021
```





The image shows a screenshot of the Visual Studio Code interface. The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The title bar indicates the file is 'Red_Black_tree.cpp - Visual Studio Code'. The left sidebar contains icons for Explorer, Search, Source Control, Run and Debug, and Extensions. The main editor area is dark-themed and shows the following text:

```
1: Code
Enter number to be searched.
2
2color :black Press any key to continue . . .
```

The status bar at the bottom displays 'Ln 95, Col 28', 'Spaces: 4', 'UTF-8', 'CRLF', 'C++', 'Win32', and the date '18-05-2021'.

QUESTION 2

E:\2.exe

The edges in the given graph are::

```
< 1 , 2 > 5
< 1 , 3 > 6
< 1 , 4 > 3
< 2 , 3 > 5
< 2 , 4 > 1
< 3 , 4 > 7
```

After sorting the edges in the given graph are::

```
2 , 4 > ::1
1 , 4 > ::3
1 , 2 > ::5
2 , 3 > ::5
1 , 3 > ::6
3 , 4 > ::7
```

***** THE MINIMUM SPANNING TREE IS*****The edge included in MST is :: < 2 , 4 >

The edge included in MST is :: < 1 , 4 >

Edge < 1 , 2 > is not included as it forms a cycle

The edge included in MST is :: < 2 , 3 >

Edge < 1 , 3 > is not included as it forms a cycle

Edge < 3 , 4 > is not included as it forms a cycle

Process exited after 7.247 seconds with return value 0
Press any key to continue . . .

QUESTION 3.

E:\ques3.exe

Enter number of elements to be sorted:

4

Enter 4 elements to be sorted:

2

3

3

6

Enter the sorting technique to be used

1. Bubble Sort
2. Selection Sort
3. Insertion Sort
4. Merge Sort
5. Quick Sort

2

Sorted array is:2 3 3 6

No of Comparisions : 4

Process exited after 14.4 seconds with return value 0

Press any key to continue . . .