

LAB MANUAL 8

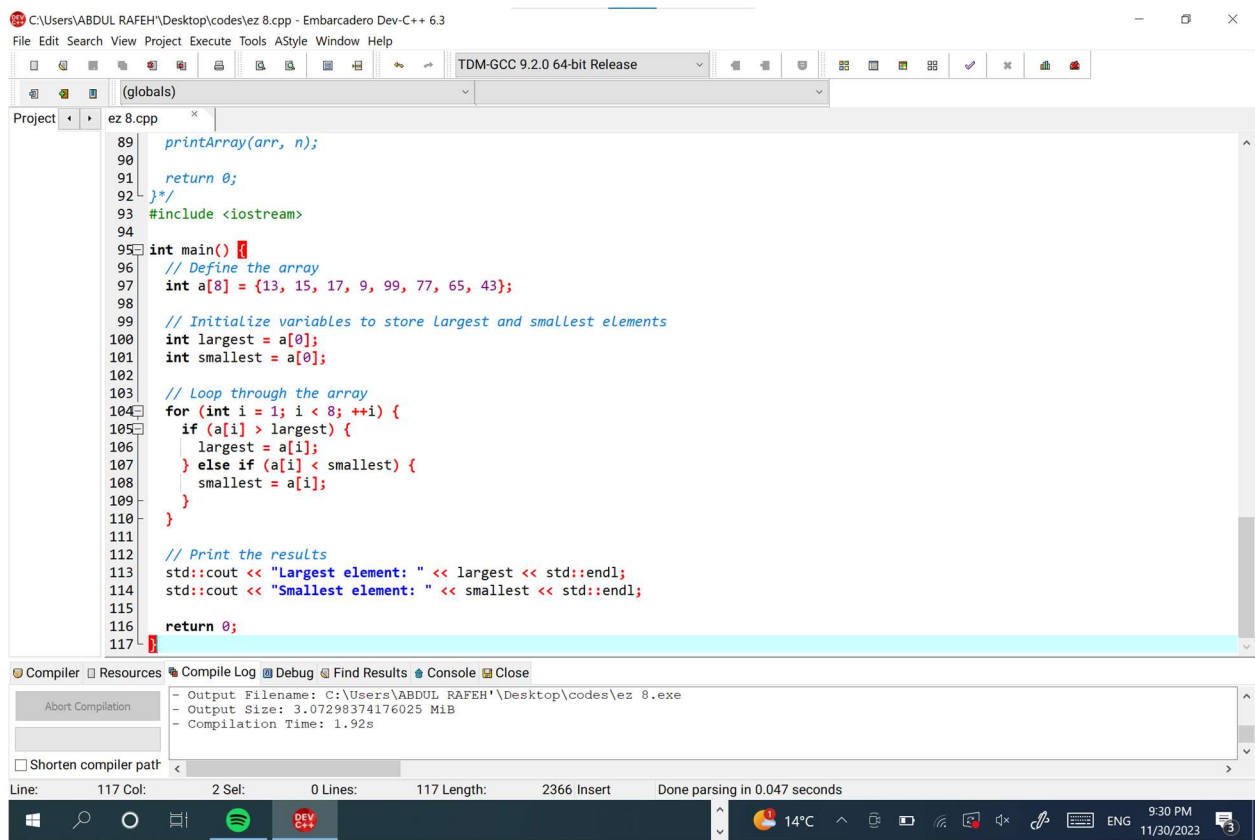
ABDUL RAFEH

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SECTION C

HOME TASK:

PROGRAM 1:



The screenshot shows a C++ IDE with a project named 'ez 8.cpp'. The code is as follows:

```
89 printArray(arr, n);
90
91 return 0;
92 }*/
93 #include <iostream>
94
95 int main() {
96     // Define the array
97     int a[8] = {13, 15, 17, 9, 99, 77, 65, 43};
98
99     // Initialize variables to store largest and smallest elements
100     int largest = a[0];
101     int smallest = a[0];
102
103     // Loop through the array
104     for (int i = 1; i < 8; ++i) {
105         if (a[i] > largest) {
106             largest = a[i];
107         } else if (a[i] < smallest) {
108             smallest = a[i];
109         }
110     }
111
112     // Print the results
113     std::cout << "Largest element: " << largest << std::endl;
114     std::cout << "Smallest element: " << smallest << std::endl;
115
116     return 0;
117 }
```

The IDE also shows a compiler output window with the following information:

- Output Filename: C:\Users\ABDUL RAFEH\Desktop\codes\ez 8.exe
- Output Size: 3.07298374176025 MIB
- Compilation Time: 1.92s

The status bar at the bottom indicates the current line is 117, column 17, with 0 lines selected. The total length is 117, and the insertion point is at 2366. The parsing time is 0.047 seconds. The system tray shows the date and time as 9:30 PM on 11/30/2023.

```
C:\Users\ABDUL RAFEH\Desktop\codes\vez 8.exe
Largest element: 99
Smallest element: 9

-----
Process exited after 0.1058 seconds with return value 0
Press any key to continue . . .
```

PROGRAM 2:

C:\Users\ABDUL RAFEH\Desktop\codes\ez 8.cpp - Embarcadero Dev-C++ 6.3

File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 9.2.0 64-bit Release

(globals)

Project [ez 8.cpp]

```
117- */
118 #include <iostream>
119 #include <unordered_map>
120
121 int findMostRepeatedElement(int arr[], int n) {
122     std::unordered_map<int, int> countMap;
123     int maxCount = 0;
124     int mostRepeatedElement;
125
126     // Count the occurrences of each element.
127     for (int i = 0; i < n; ++i) {
128         countMap[arr[i]]++;
129     }
130
131     // Find the element with the highest count.
132     for (auto itr = countMap.begin(); itr != countMap.end(); ++itr) {
133         if (itr->second > maxCount) {
134             maxCount = itr->second;
135             mostRepeatedElement = itr->first;
136         }
137     }
138
139     return mostRepeatedElement;
140 }
141
142 int main() {
143     // Example usage
144     int arr[] = {1, 2, 3, 4, 5, 5, 2, 5, 2};
145     int n = sizeof(arr) / sizeof(arr[0]);
146
147     int mostRepeated = findMostRepeatedElement(arr, n);
148
149     std::cout << "The most repeated element is " << mostRepeated << std::endl;
150
151     return 0;
152 }
153
```

Compiler Resources Compile Log Debug Find Results Console Close

Abort Compilation

Output Filename: C:\Users\ABDUL RAFEH\Desktop\codes\ez 8.exe
Output Size: 3.07298374176025 MiB
Compilation Time: 1.92s

Shorten compiler path

Line: 152 Col: 2 Sel: 0 Lines: 153 Length: 3216 Insert Done parsing in 0.047 seconds

14°C 9:33 PM 11/30/2023

C:\Users\ABDUL RAFEH\Desktop\codes\ez 8.exe

The most repeated element is 5

Process exited after 0.09889 seconds with return value 0
Press any key to continue . . .

14°C 9:34 PM 11/30/2023

PROGRAM 3:

The screenshot displays the Embarcadero Dev-C++ 6.3 IDE. The main window shows a C++ file named 'ez 8.cpp' with the following code:

```
153 #include <iostream>
154
155 int main() {
156     // Define the array
157     int arr[5];
158
159     // Get user input
160     std::cout << "Enter 5 elements: ";
161     for (int i = 0; i < 5; ++i) {
162         std::cin >> arr[i];
163     }
164
165     // Swap elements
166     int temp = arr[2];
167     arr[2] = arr[4];
168     arr[4] = temp;
169
170     // Print the swapped array
171     std::cout << "Swapped array: ";
172     for (int i = 0; i < 5; ++i) {
173         std::cout << arr[i] << " ";
174     }
175     std::cout << std::endl;
176
177     return 0;
178 }
179
```

The bottom panel shows the 'Compiler' tab with the following output:

```
Output File: C:\Users\ABDUL RAFAH\Desktop\codes\ez 8.exe
Output Size: 3.07249546051025 MIB
Compilation Time: 1.45s
```

The status bar at the bottom indicates 'Line: 178 Col: 2 Sel: 0 Lines: 179 Length: 3680 Insert Done parsing in 0.047 seconds'. The Windows taskbar at the very bottom shows the time as 9:37 PM on 11/30/2023.

```
C:\Users\ABDUL RAFEH\Desktop\codes\vez 8.exe
Enter 5 elements: 5
6
43
21
4
Swapped array: 5 6 4 21 43

-----
Process exited after 10.56 seconds with return value 0
Press any key to continue . . .
```