

# **Fundamentals of Programming**

## **Lab Report 2**

**1<sup>st</sup> SEMESTER**



**Session: ME-15**

**Section: C**

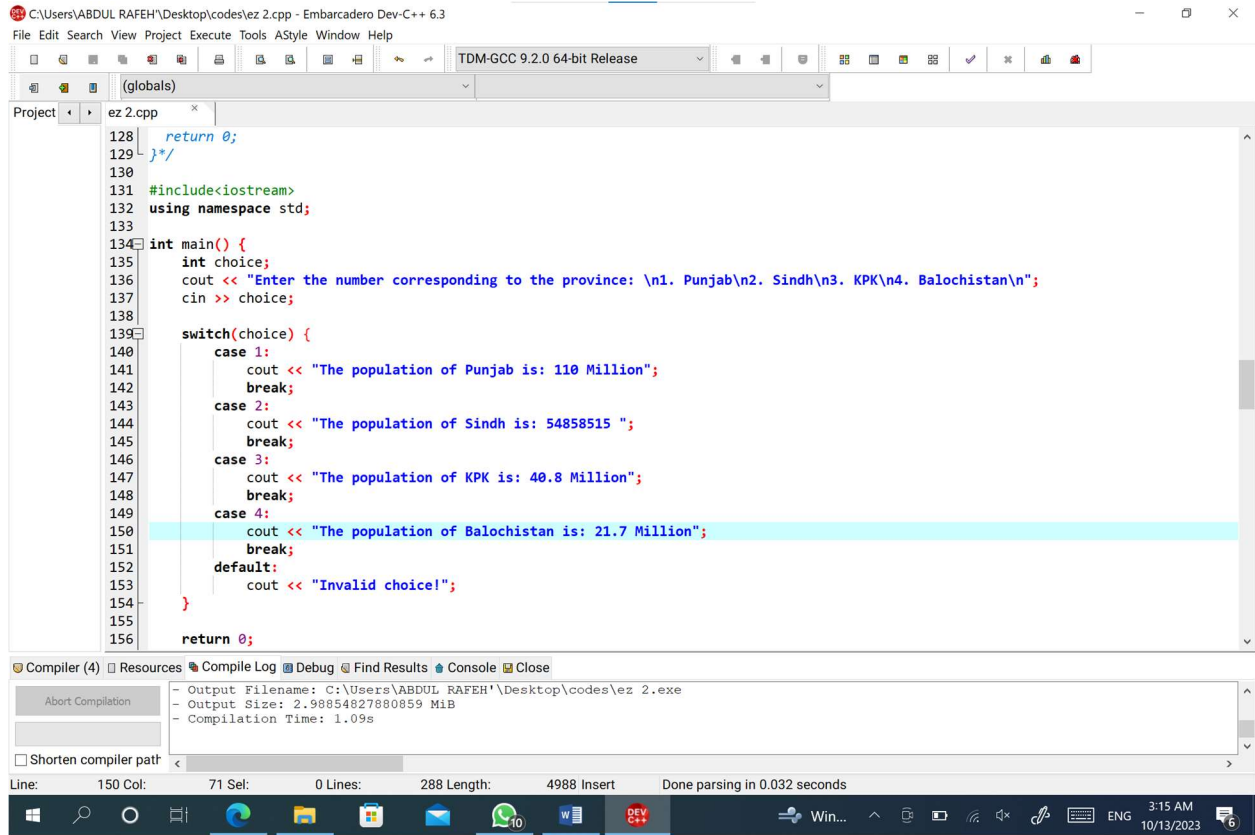
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## LAB MANUAL 3

### 1. Write a C++ program to print the total number of populations in Punjab, Sindh, KPK, and Balochistan using a switch case.



```
128     return 0;
129 }*/
130
131 #include<iostream>
132 using namespace std;
133
134 int main() {
135     int choice;
136     cout << "Enter the number corresponding to the province: \n1. Punjab\n2. Sindh\n3. KPK\n4. Balochistan\n";
137     cin >> choice;
138
139     switch(choice) {
140     case 1:
141         cout << "The population of Punjab is: 110 Million";
142         break;
143     case 2:
144         cout << "The population of Sindh is: 54858515 ";
145         break;
146     case 3:
147         cout << "The population of KPK is: 40.8 Million";
148         break;
149     case 4:
150         cout << "The population of Balochistan is: 21.7 Million";
151         break;
152     default:
153         cout << "Invalid choice!";
154     }
155
156     return 0;
}
```

Compiler (4) | Resources | Compile Log | Debug | Find Results | Console | Close

Abort Compilation

- Output Filename: C:\Users\ABDUL RAFAH\Desktop\codes\ez 2.exe  
- Output Size: 2.98854827880859 MiB  
- Compilation Time: 1.09s

☐ Shorten compiler path

Line: 150 Col: 71 Sel: 0 Lines: 288 Length: 4988 Insert Done parsing in 0.032 seconds

Win... ENG 3:15 AM 10/13/2023

```
C:\Users\ABDUL RAFEH\Desktop\codes\ez 2.exe
Enter the number corresponding to the province:
1. Punjab
2. Sindh
3. KPK
4. Balochistan
2
The population of Sindh is: 54858515
-----
Process exited after 4.632 seconds with return value 0
Press any key to continue . . .
```

**2. Write a C++ program to check whether an alphabet is a vowel or consonant using a switch case.**

C:\Users\ABDUL RAFEH\Desktop\codes\ez 2.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 2.cpp

```
157 */
158 #include <iostream>
159
160 using namespace std;
161
162 int main() {
163
164     char alphabet;
165
166     cout << "Enter an alphabet: ";
167     cin >> alphabet;
168
169     switch (alphabet) {
170     case 'a':
171     case 'e':
172     case 'i':
173     case 'o':
174     case 'u':
175         cout << alphabet << " is a vowel" << endl;
176         break;
177     default:
178         cout << alphabet << " is a consonant" << endl;
179         break;
180     }
181
182     return 0;
183 }
184
185 */#include <iostream>
```

Compiler (4) Resources Compile Log Debug Find Results Console Close

Abort Compilation

- Output Filename: C:\Users\ABDUL RAFEH\Desktop\codes\ez 2.exe  
- Output Size: 2.98873424530029 MiB  
- Compilation Time: 1.11s

Shorten compiler path

Line: 158 Col: 1 Sel: 0 Lines: 288 Length: 4988 Insert Done parsing in 0.062 seconds

31°C 3:17 AM 10/13/2023

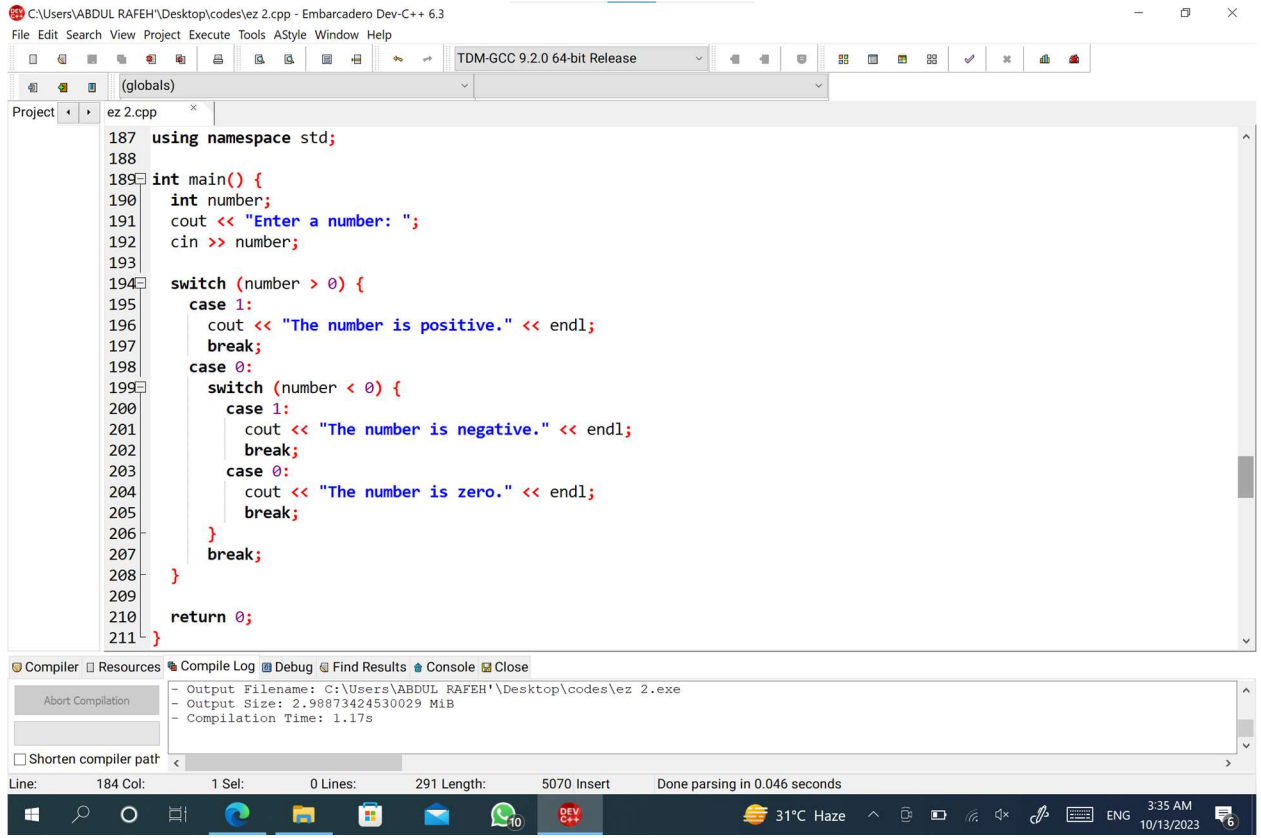
C:\Users\ABDUL RAFEH\Desktop\codes\ez 2.exe

Enter an alphabet: r  
r is a consonant

-----  
Process exited after 3.81 seconds with return value 0  
Press any key to continue . . .

31°C 3:16 AM 10/13/2023

### 3. Write a C++ program to check whether a number is positive, negative, or zero using a switch case



The screenshot shows the Embarcadero Dev-C++ 6.3 IDE. The main window displays a C++ program in a file named 'ez 2.cpp'. The program uses nested switch statements to check if a number is positive, negative, or zero. The compiler window at the bottom shows the compilation output, indicating that the program was successfully compiled into 'ez 2.exe'.

```
187 using namespace std;
188
189 int main() {
190     int number;
191     cout << "Enter a number: ";
192     cin >> number;
193
194     switch (number > 0) {
195     case 1:
196         cout << "The number is positive." << endl;
197         break;
198     case 0:
199         switch (number < 0) {
200         case 1:
201             cout << "The number is negative." << endl;
202             break;
203         case 0:
204             cout << "The number is zero." << endl;
205             break;
206         }
207         break;
208     }
209
210     return 0;
211 }
```

Compiler Output:

```
- Output Filename: C:\Users\ABDUL RAFAH\Desktop\codes\ez 2.exe
- Output Size: 2.98873424530029 MiB
- Compilation Time: 1.17s
```

Line: 184 Col: 1 Sel: 0 Lines: 291 Length: 5070 Insert Done parsing in 0.046 seconds

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```
C:\Users\ABDUL RAFEH\Desktop\codes\ez 2.exe
Enter a number: -4
The number is negative.

-----
Process exited after 5.176 seconds with return value 0
Press any key to continue . . .
```

4. Write a C++ to find out whether a person is an adult, teenager, or child using nested if-else

C:\Users\ABDUL RAFEH\Desktop\codes\ez 2.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 2.cpp

```
208     return 0;
209 }*/
210 #include <iostream>
211
212 using namespace std;
213
214 int main() {
215
216     int age;
217
218     cout << "Enter your age: ";
219     cin >> age;
220
221     if (age >= 18) {
222         cout << "You are an adult" << endl;
223     } else {
224         if (age >= 13) {
225             cout << "You are a teenager" << endl;
226         } else {
227             cout << "You are a child" << endl;
228         }
229     }
230
231     return 0;
232 }
```

Compiler (4) Resources Compile Log Debug Find Results Console Close

Abort Compilation

- Output Filename: C:\Users\ABDUL RAFEH\Desktop\codes\ez 2.exe  
- Output Size: 2.98873424530029 MiB  
- Compilation Time: 1.11s

Shorten compiler path

Line: 209 Col: 4 Sel: 0 Lines: 288 Length: 4986 Insert Done parsing in 0.062 seconds

31°C 3:18 AM 10/13/2023

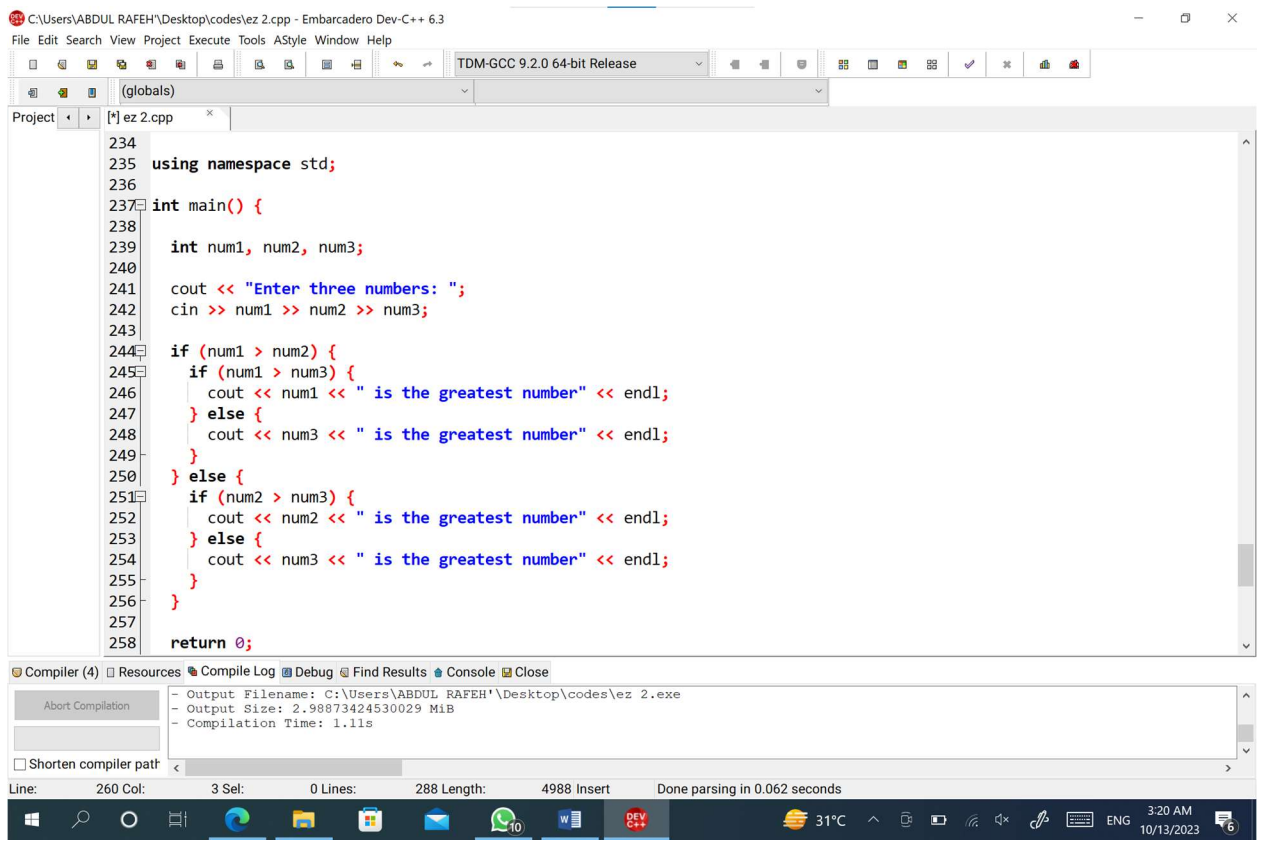
C:\Users\ABDUL RAFEH\Desktop\codes\ez 2.exe

Enter your age: 5  
You are a child

-----  
Process exited after 1.857 seconds with return value 0  
Press any key to continue . . .

31°C 3:19 AM 10/13/2023

## 5. Write a C++ program that takes three number from the user and find the greatest number out of the three numbers using nested if-else statements



The screenshot shows the Embarcadero Dev-C++ 6.3 IDE. The main window displays a C++ program in a file named 'ez 2.cpp'. The program uses nested if-else statements to determine the greatest of three numbers entered by the user. The code is as follows:

```
234
235 using namespace std;
236
237 int main() {
238
239     int num1, num2, num3;
240
241     cout << "Enter three numbers: ";
242     cin >> num1 >> num2 >> num3;
243
244     if (num1 > num2) {
245         if (num1 > num3) {
246             cout << num1 << " is the greatest number" << endl;
247         } else {
248             cout << num3 << " is the greatest number" << endl;
249         }
250     } else {
251         if (num2 > num3) {
252             cout << num2 << " is the greatest number" << endl;
253         } else {
254             cout << num3 << " is the greatest number" << endl;
255         }
256     }
257
258     return 0;
}
```

The bottom of the IDE shows the 'Compiler (4)' window with the following output:

```
- Output Filename: C:\Users\ABDUL RAFAH\Desktop\codes\ez 2.exe
- Output Size: 2.98873424530029 MiB
- Compilation Time: 1.11s
```

The status bar at the bottom indicates 'Line: 260 Col: 3 Sel: 0 Lines: 288 Length: 4988 Insert Done parsing in 0.062 seconds'. The Windows taskbar at the very bottom shows the date and time as 3:20 AM on 10/13/2023.



```
C:\Users\ABDUL RAFEH\Desktop\codes\ez 2.exe
Enter an alphabet: y
it is a consonant

-----
Process exited after 10.69 seconds with return value 0
Press any key to continue . . .
```

6. Write a C++ program to check whether the alphabet entered by the user is Vowel or Consonant using nested if-else

C:\Users\ABDUL RAFEH\Desktop\codes\ez 2.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 2.cpp

```
261
262 using namespace std;
263
264 int main() {
265
266     char alphabet;
267
268     cout << "Enter an alphabet: ";
269     cin >> alphabet;
270
271     if (alphabet >= 'a' && alphabet <= 'z') {
272
273         if (alphabet == 'a' || alphabet == 'e' || alphabet == 'i' || alphabet == 'o' || alphabet == 'u') {
274             cout << alphabet << " is a vowel" << endl;
275         }
276         else{
277             cout<<"it is a consonant"<<endl;
278         }
279     } else{
280         cout<<"it is not a letter"<<endl;
281     }
282     return 0;
283 }
284
285
```

Compiler (4) Resources Compile Log Debug Find Results Console Close

About Compilation

- Output Filename: C:\Users\ABDUL RAFEH\Desktop\codes\ez 2.exe
- Output Size: 2.98873424530029 MiB
- Compilation Time: 1.22s

Shorten compiler path

Line: 283 Col: 2 Sel: 0 Lines: 288 Length: 4984 Insert Done parsing in 0.031 seconds

31°C 3:25 AM 10/13/2023

C:\Users\ABDUL RAFEH\Desktop\codes\ez 2.exe

Enter an alphabet: y  
it is a consonant

-----

Process exited after 10.69 seconds with return value 0  
Press any key to continue . . .

31°C 3:24 AM 10/13/2023

