

Department of Artificial Intelligence and Multimedia Gaming
Fundamentals of Programming
(Fall-2025)

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Section: D

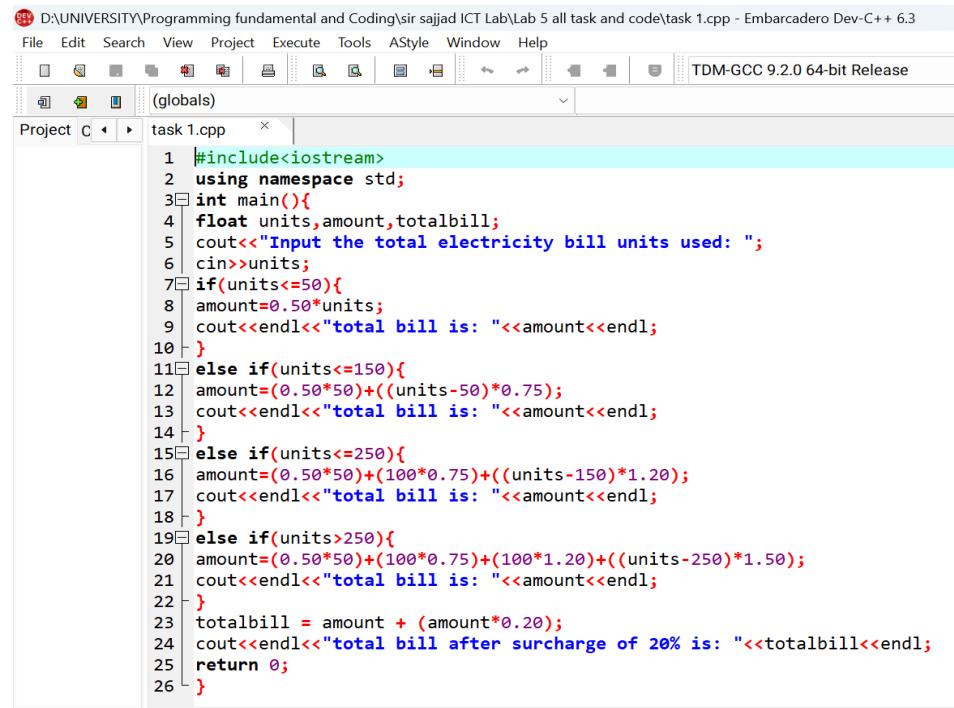
Sap Id: 5000001141

LAB No. 05

LECTURER: SAJJAD ALI RAJPER

Task 1:

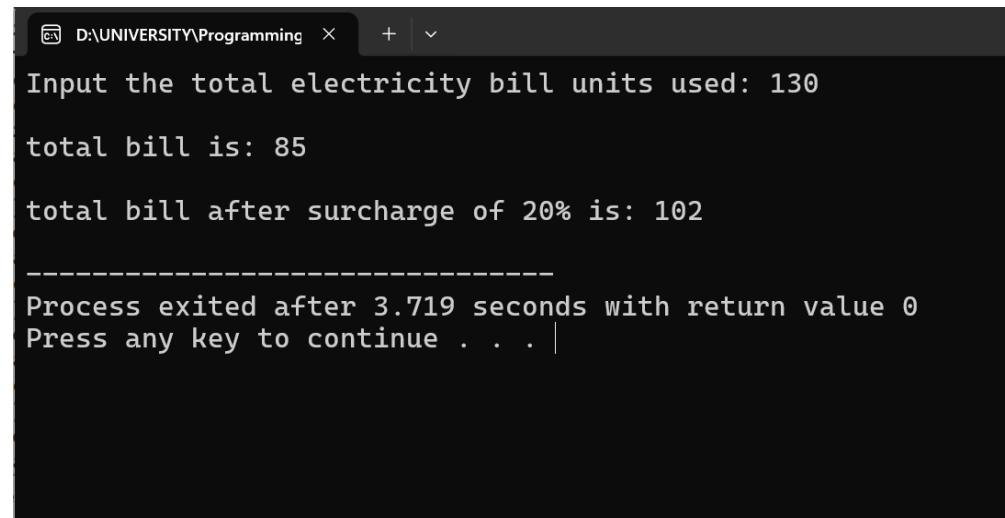
Code:



The screenshot shows the Embarcadero Dev-C++ 6.3 IDE interface. The menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, and Help. The toolbar has various icons for file operations like Open, Save, and Build. The status bar at the bottom right says "TDM-GCC 9.2.0 64-bit Release". The code editor window displays a C++ program named "task 1.cpp". The code calculates electricity bill based on units used, applying different rates for different ranges and adding a 20% surcharge for units above 250.

```
1 #include<iostream>
2 using namespace std;
3 int main(){
4     float units,amount,totalbill;
5     cout<<"Input the total electricity bill units used: ";
6     cin>>units;
7     if(units<=50){
8         amount=0.50*units;
9         cout<<endl<<"total bill is: "<<amount<<endl;
10    }
11    else if(units<=150){
12        amount=(0.50*50)+((units-50)*0.75);
13        cout<<endl<<"total bill is: "<<amount<<endl;
14    }
15    else if(units<=250){
16        amount=(0.50*50)+(100*0.75)+((units-150)*1.20);
17        cout<<endl<<"total bill is: "<<amount<<endl;
18    }
19    else if(units>250){
20        amount=(0.50*50)+(100*0.75)+(100*1.20)+((units-250)*1.50);
21        cout<<endl<<"total bill is: "<<amount<<endl;
22    }
23    totalbill = amount + (amount*0.20);
24    cout<<endl<<"total bill after surcharge of 20% is: "<<totalbill<<endl;
25    return 0;
26 }
```

Output:

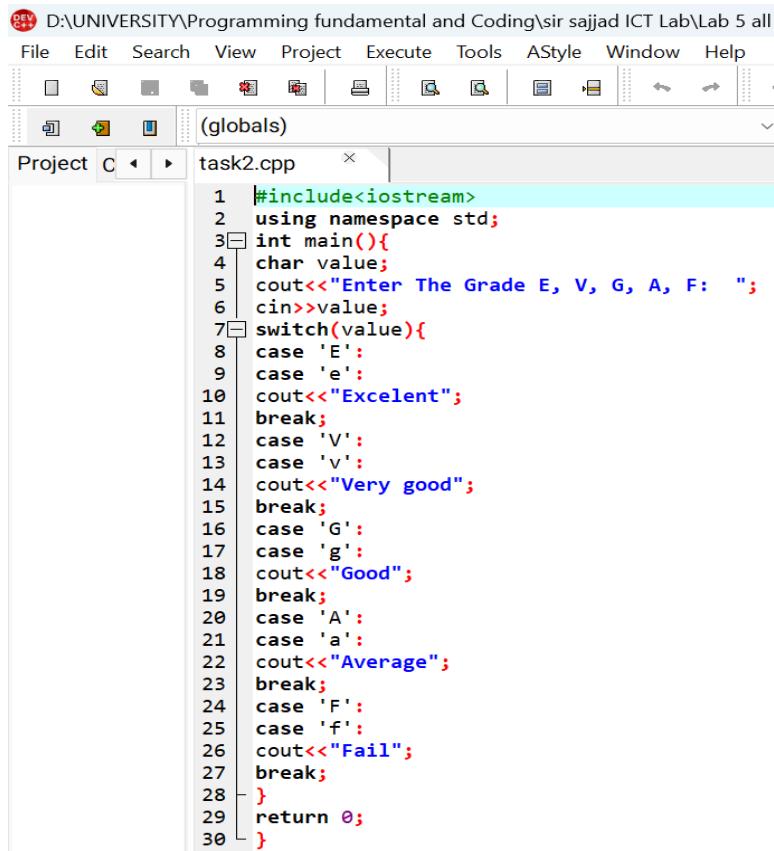


The screenshot shows a terminal window with the command "D:\UNIVERSITY\Programming" followed by a file icon. The window displays the execution of the program. It prompts for input, shows the calculated bill, and then displays the total bill after a 20% surcharge. Finally, it shows the process exit status and a prompt to press any key to continue.

```
Input the total electricity bill units used: 130
total bill is: 85
total bill after surcharge of 20% is: 102
-----
Process exited after 3.719 seconds with return value 0
Press any key to continue . . . |
```

Task 2:

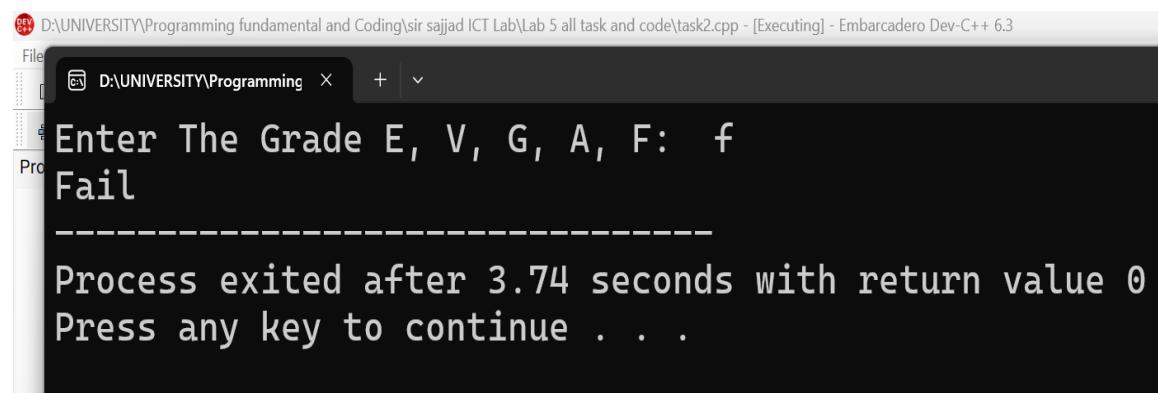
Code:



The screenshot shows the Dev-C++ IDE interface. The menu bar includes File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, and Help. The toolbar has various icons for file operations like Open, Save, and Build. The project tree on the left shows a single file named "task2.cpp". The code editor window displays the following C++ code:

```
1 #include<iostream>
2 using namespace std;
3 int main(){
4     char value;
5     cout<<"Enter The Grade E, V, G, A, F:  ";
6     cin>>value;
7     switch(value){
8         case 'E':
9         case 'e':
10            cout<<"Excelent";
11            break;
12        case 'V':
13        case 'v':
14            cout<<"Very good";
15            break;
16        case 'G':
17        case 'g':
18            cout<<"Good";
19            break;
20        case 'A':
21        case 'a':
22            cout<<"Average";
23            break;
24        case 'F':
25        case 'f':
26            cout<<"Fail";
27            break;
28    }
29    return 0;
30 }
```

Output:

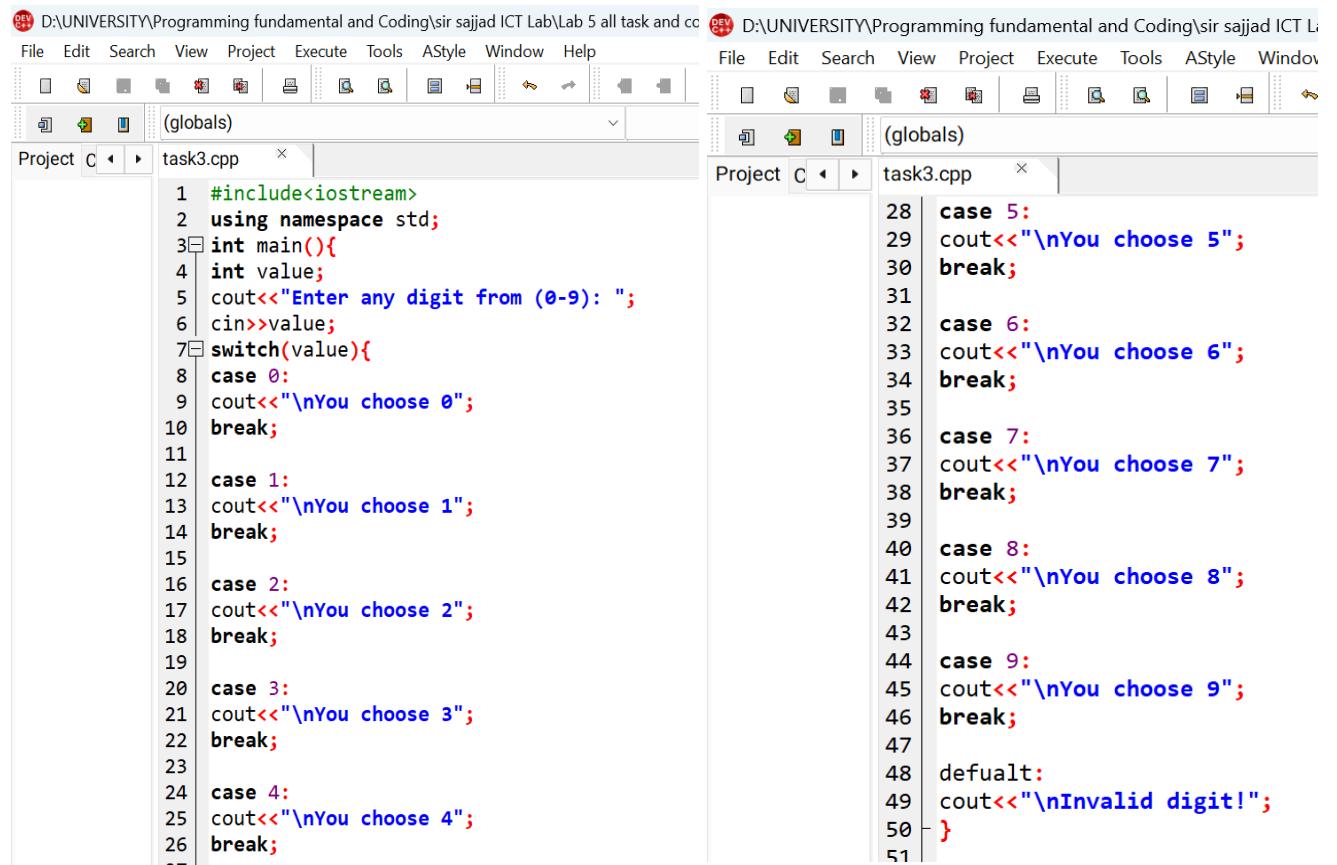


The screenshot shows the terminal window of the Dev-C++ IDE. The title bar indicates the path: D:\UNIVERSITY\Programming fundamental and Coding\sir sajjad ICT Lab\Lab 5 all task and code\task2.cpp - [Executing] - Embarcadero Dev-C++ 6.3. The terminal window displays the following text:

```
File D:\UNIVERSITY\Programming x + v
Enter The Grade E, V, G, A, F:  f
Fail
-----
Process exited after 3.74 seconds with return value 0
Press any key to continue . . .
```

Task 3:

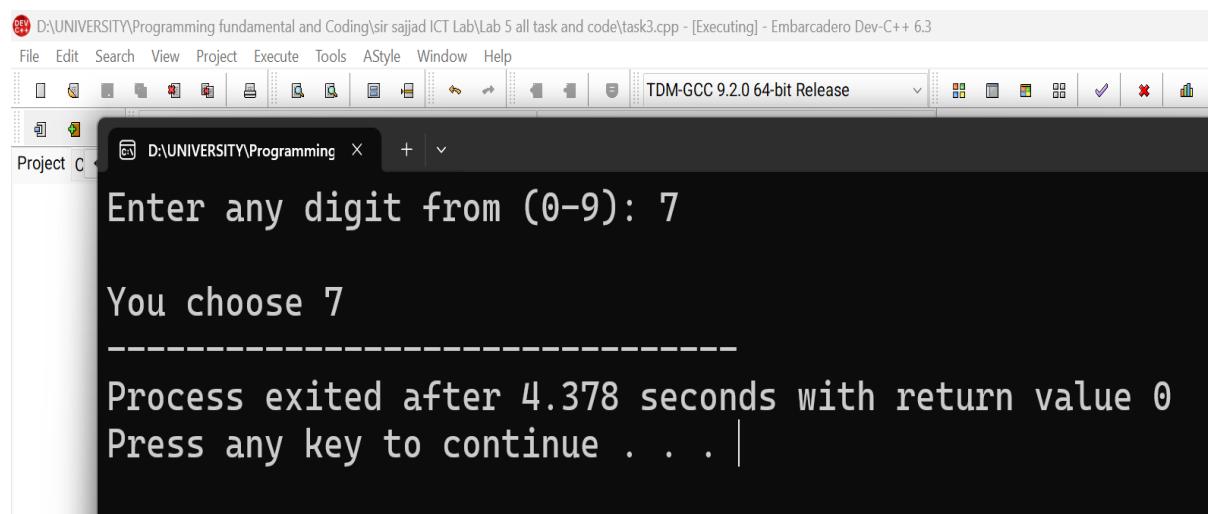
Code:



The image shows two instances of the Dev-C++ integrated development environment. Both windows have the title "task3.cpp" and are displaying C++ code. The left window shows the initial part of the code, including the inclusion of iostream, the main function, and the start of a switch statement. The right window shows the continuation of the switch statement, handling cases from 5 to 9, and a default case for invalid input.

```
1 #include<iostream>
2 using namespace std;
3 int main(){
4     int value;
5     cout<<"Enter any digit from (0-9): ";
6     cin>>value;
7     switch(value){
8         case 0:
9             cout<<"\nYou choose 0";
10            break;
11
12         case 1:
13             cout<<"\nYou choose 1";
14            break;
15
16         case 2:
17             cout<<"\nYou choose 2";
18            break;
19
20         case 3:
21             cout<<"\nYou choose 3";
22            break;
23
24         case 4:
25             cout<<"\nYou choose 4";
26            break;
27
28     case 5:
29         cout<<"\nYou choose 5";
30         break;
31
32     case 6:
33         cout<<"\nYou choose 6";
34         break;
35
36     case 7:
37         cout<<"\nYou choose 7";
38         break;
39
40     case 8:
41         cout<<"\nYou choose 8";
42         break;
43
44     case 9:
45         cout<<"\nYou choose 9";
46         break;
47
48     default:
49         cout<<"\nInvalid digit!";
50     }
51 }
```

Output:



The image shows the terminal window of the Dev-C++ IDE during the execution of the program. It displays the prompt "Enter any digit from (0-9):", the user's input "7", the program's response "You choose 7", a dashed line separator, and the termination message "Process exited after 4.378 seconds with return value 0".

```
Enter any digit from (0-9): 7
You choose 7
-----
Process exited after 4.378 seconds with return value 0
Press any key to continue . . . |
```