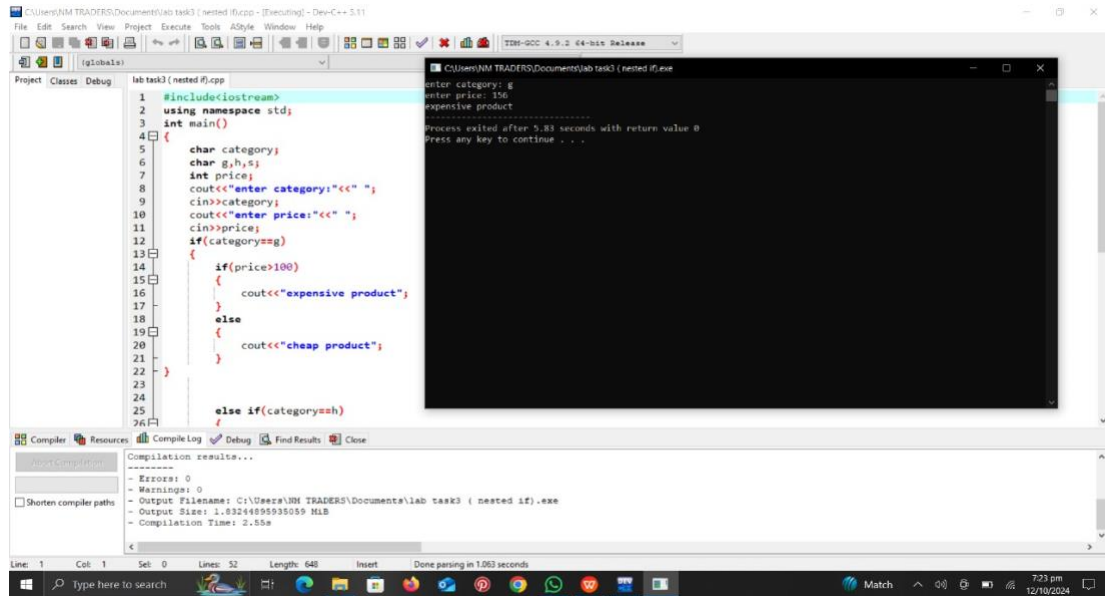


NAME: ZOHA WASIM

SAP ID: 65342

QUESTION 1:



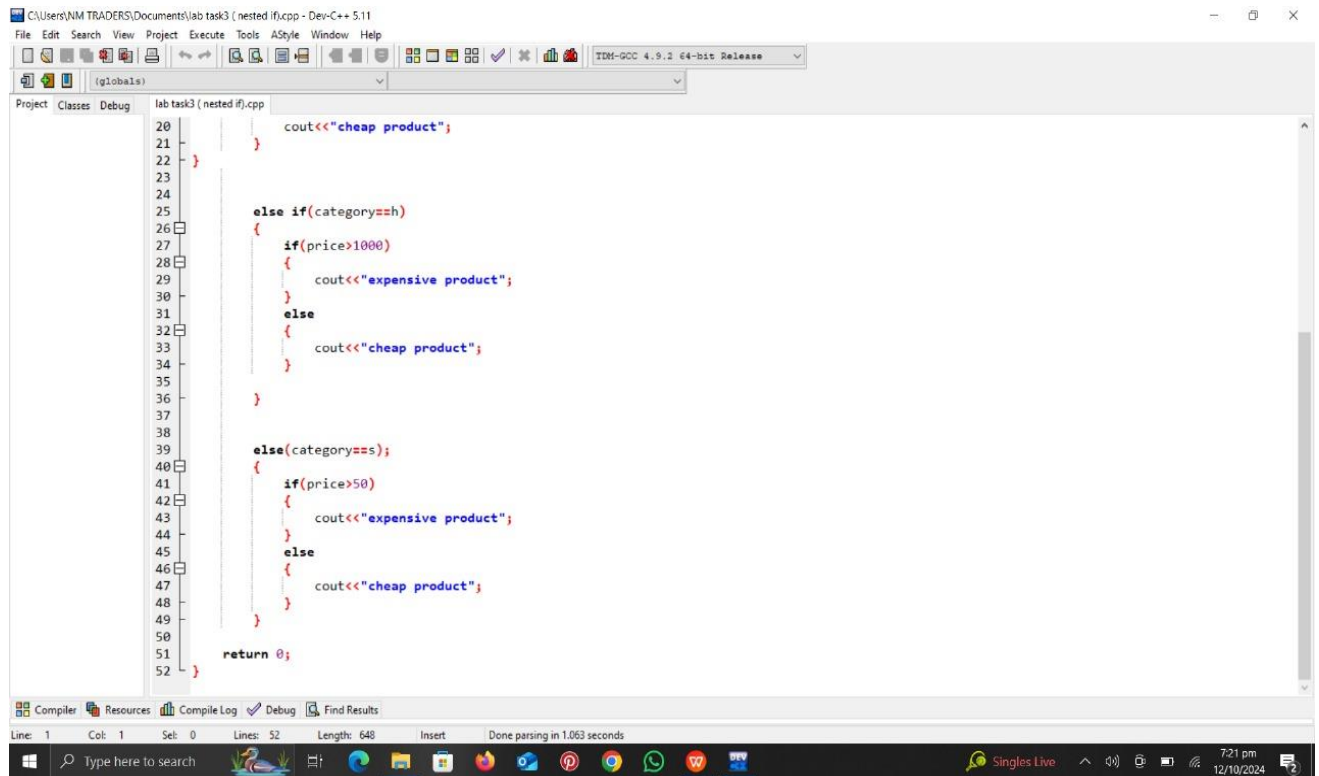
The screenshot shows a C++ IDE with the following code in `lab task3 (nested if).cpp`:

```
1 #include<iostream>
2 using namespace std;
3 int main()
4 {
5     char category;
6     char g,h,s;
7     int price;
8     cout<<"enter category:"<<" ";
9     cin>>category;
10    cout<<"enter price:"<<" ";
11    cin>>price;
12    if(category==g)
13    {
14        if(price>100)
15        {
16            cout<<"expensive product";
17        }
18        else
19        {
20            cout<<"cheap product";
21        }
22    }
23
24    else if(category==h)
25    {
26        if(price>1000)
27        {
28            cout<<"expensive product";
29        }
30        else
31        {
32            cout<<"cheap product";
33        }
34    }
35
36    else if(category==s)
37    {
38        if(price>50)
39        {
40            cout<<"expensive product";
41        }
42        else
43        {
44            cout<<"cheap product";
45        }
46    }
47
48    return 0;
49 }
```

The output window shows the execution results:

```
enter category: g
enter price: 156
expensive product
Process exited after 5.83 seconds with return value 0
Press any key to continue . . .
```

The compiler output shows no errors or warnings.

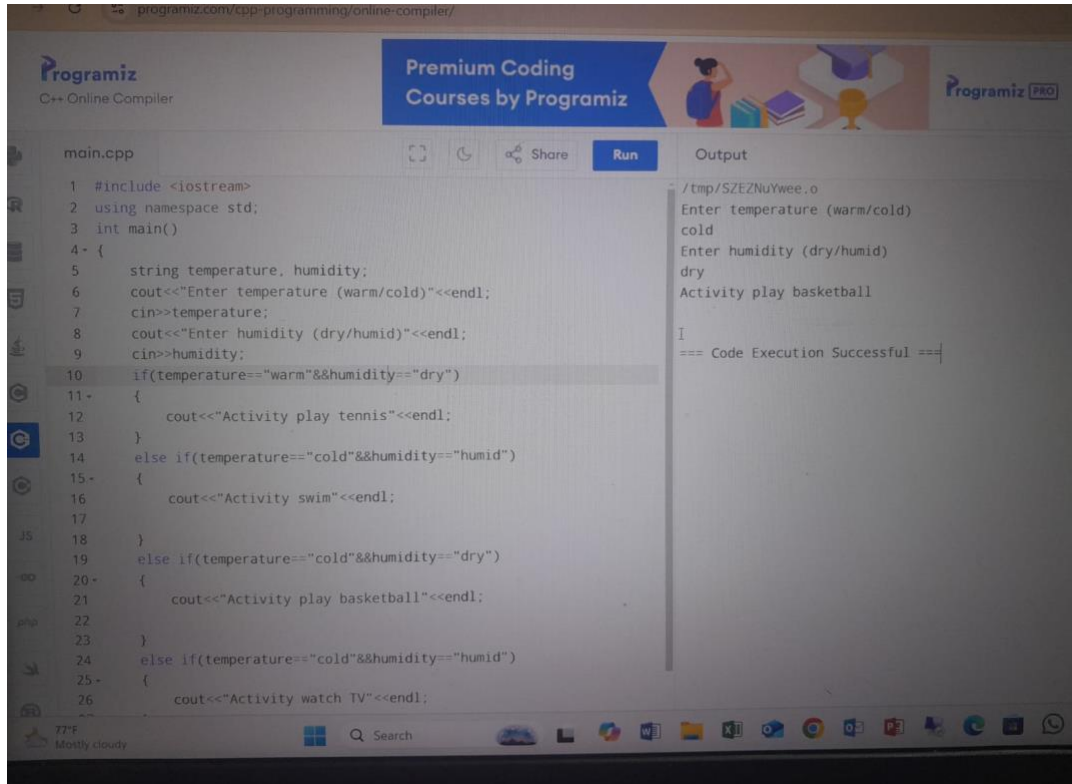


The screenshot shows the same C++ IDE with the same code as the first screenshot. The output window shows the execution results:

```
enter category: g
enter price: 156
expensive product
Process exited after 5.83 seconds with return value 0
Press any key to continue . . .
```

The compiler output shows no errors or warnings.

QUESTION 2:



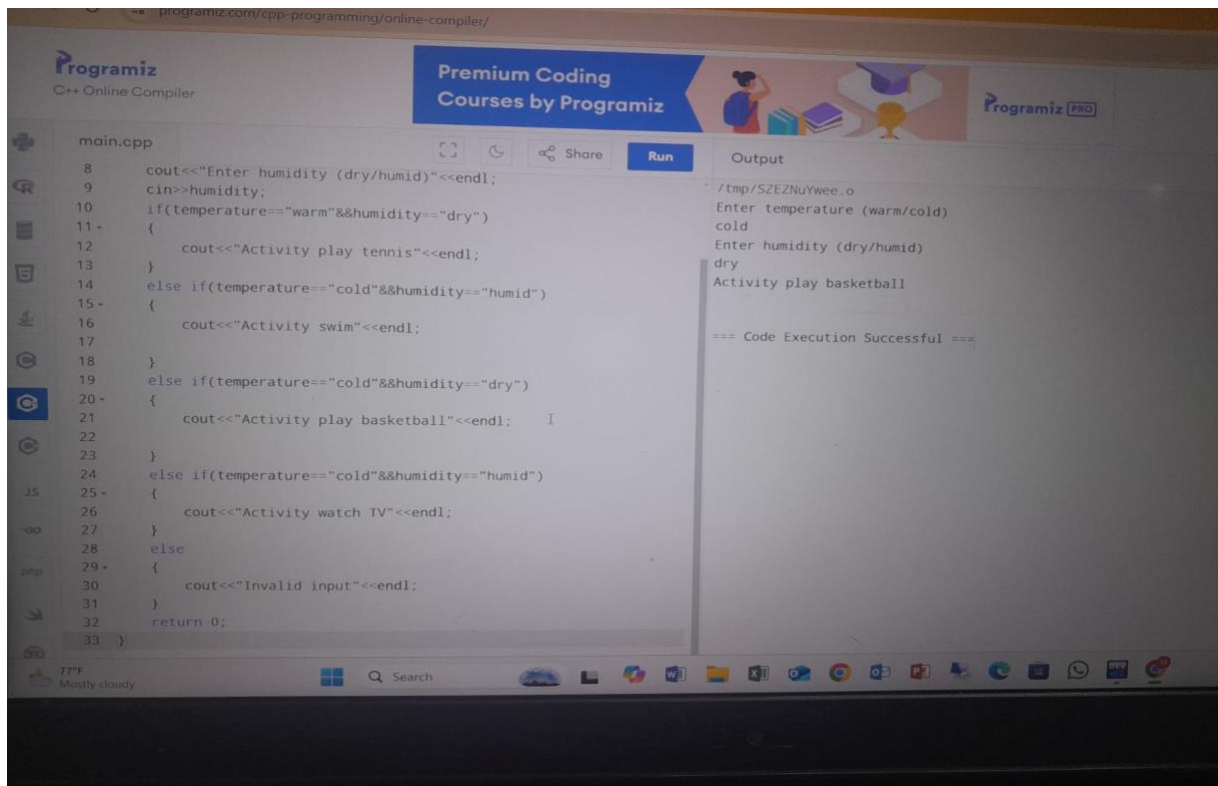
main.cpp

```
1 #include <iostream>
2 using namespace std;
3 int main()
4 {
5     string temperature, humidity;
6     cout<<"Enter temperature (warm/cold)"<<endl;
7     cin>>temperature;
8     cout<<"Enter humidity (dry/humid)"<<endl;
9     cin>>humidity;
10    if(temperature=="warm"&&humidity=="dry")
11    {
12        cout<<"Activity play tennis"<<endl;
13    }
14    else if(temperature=="cold"&&humidity=="humid")
15    {
16        cout<<"Activity swim"<<endl;
17    }
18    else if(temperature=="cold"&&humidity=="dry")
19    {
20        cout<<"Activity play basketball"<<endl;
21    }
22    else if(temperature=="cold"&&humidity=="humid")
23    {
24        cout<<"Activity watch TV"<<endl;
25    }
26 }
```

Output

```
/tmp/SZEZNUYwee.o
Enter temperature (warm/cold)
cold
Enter humidity (dry/humid)
dry
Activity play basketball

I
=== Code Execution Successful ===
```



main.cpp

```
8     cout<<"Enter humidity (dry/humid)"<<endl;
9     cin>>humidity;
10    if(temperature=="warm"&&humidity=="dry")
11    {
12        cout<<"Activity play tennis"<<endl;
13    }
14    else if(temperature=="cold"&&humidity=="humid")
15    {
16        cout<<"Activity swim"<<endl;
17    }
18    else if(temperature=="cold"&&humidity=="dry")
19    {
20        cout<<"Activity play basketball"<<endl;
21    }
22    else if(temperature=="cold"&&humidity=="humid")
23    {
24        cout<<"Activity watch TV"<<endl;
25    }
26    else
27    {
28        cout<<"Invalid input"<<endl;
29    }
30    return 0;
31 }
```

Output

```
/tmp/SZEZNUYwee.o
Enter temperature (warm/cold)
cold
Enter humidity (dry/humid)
dry
Activity play basketball

I
=== Code Execution Successful ===
```

QUESTION 3:

The screenshot shows the Programiz C++ Online Compiler interface. The code in `main.cpp` is as follows:

```
1 #include <iostream>
2 using namespace std;
3 int main()
4 {
5     char op;
6     double num1, num2;
7     cout<<"Enter operation(+, -, *, /)"<<endl;
8     cin>>op;
9     cout<<"Enter two numbers:"<<endl;
10    cin>>num1, num2;
11    switch(op)
12    {
13        case '+':
14            cout<<"num1 + num2";
15            break;
16        case '-':
17            cout<<"num1 - num2";
18            break;
19        case '*':
20            cout<<"num1 * num2";
21            break;
22        case '/':
23            if(num2)
24                cout<<"num1 / num2";
25            else
```

The output window shows the following text:

```
/tmp/a0TaJHbJeQ.o
Enter operation(+, -, *, /)
*
Enter two numbers:
4*5
num1 * num2

=== Code Execution Successful ===
```

The screenshot shows the Programiz C++ Online Compiler interface with an enhanced version of the calculator program. The code in `main.cpp` is as follows:

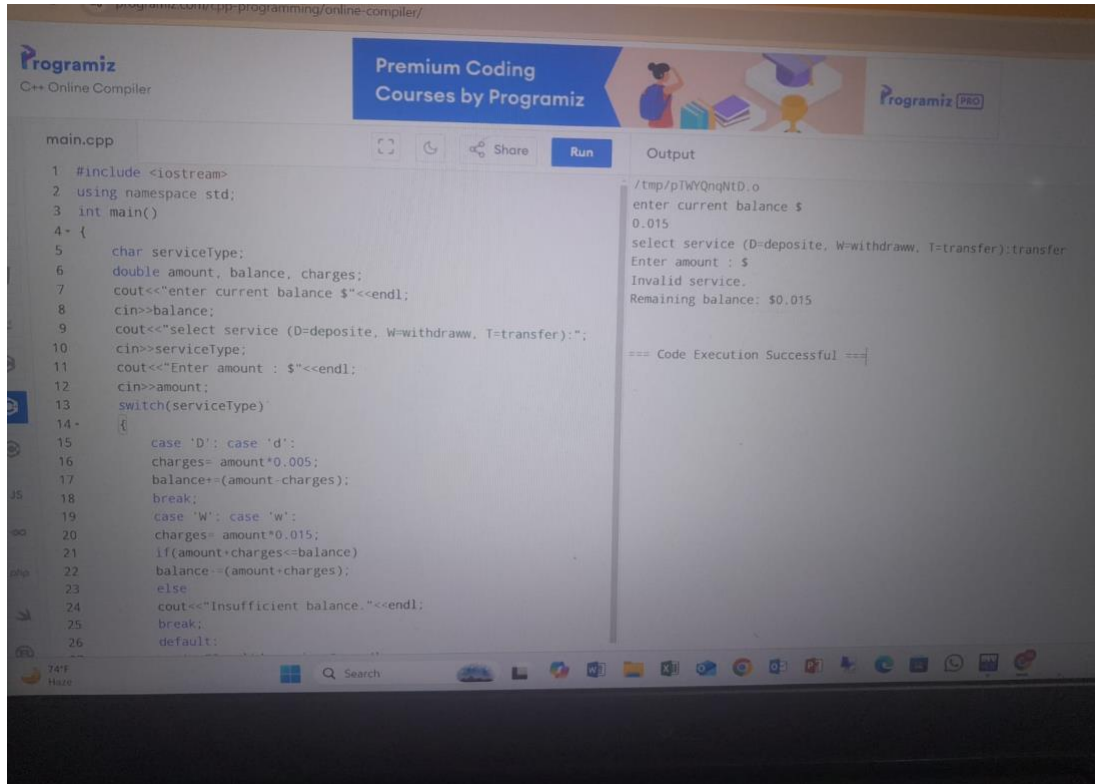
```
9     cout<<"Enter two numbers:"<<endl;
10    cin>>num1, num2;
11    switch(op)
12    {
13        case '+':
14            cout<<"num1 + num2";
15            break;
16        case '-':
17            cout<<"num1 - num2";
18            break;
19        case '*':
20            cout<<"num1 * num2";
21            break;
22        case '/':
23            if(num2)
24                cout<<"num1 / num2";
25            else
26                cout<<"Error division by zero."<<endl;
27            break;
28        default:
29            cout<<"Invalid operation";
30    }
31 }
32 return 0;
33 }
```

The output window shows the following text:

```
/tmp/a0TaJHbJeQ.o
Enter operation(+, -, *, /)
*
Enter two numbers:
4*5
num1 * num2

=== Code Execution Successful ===
```

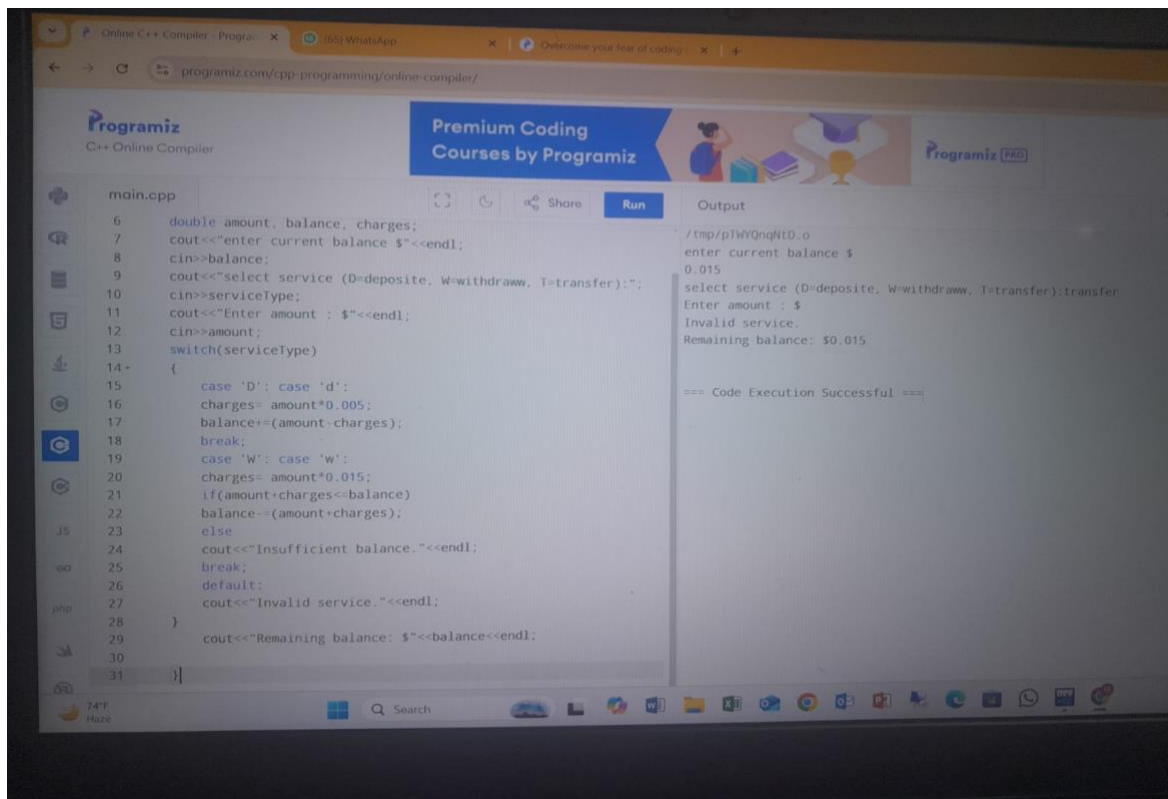
QUESTION 4:



```
main.cpp
1 #include <iostream>
2 using namespace std;
3 int main()
4 {
5     char serviceType;
6     double amount, balance, charges;
7     cout<<"enter current balance $"<<endl;
8     cin>>balance;
9     cout<<"select service (D=deposit, W=withdraw, T=transfer):";
10    cin>>serviceType;
11    cout<<"Enter amount : $"<<endl;
12    cin>>amount;
13    switch(serviceType)
14    {
15        case 'D': case 'd':
16            charges= amount*0.005;
17            balance+=(amount-charges);
18            break;
19        case 'W': case 'w':
20            charges= amount*0.015;
21            if(amount+charges<=balance)
22                balance+=(amount+charges);
23            else
24                cout<<"Insufficient balance."<<endl;
25            break;
26        default:
27            cout<<"Invalid service."<<endl;
28    }
29    cout<<"Remaining balance: $"<<balance<<endl;
30 }

Output
/tmp/pTWYQnqNTD.o
enter current balance $
0.015
select service (D=deposit, W=withdraw, T=transfer):transfer
Enter amount : $
Invalid service.
Remaining balance: $0.015

=== Code Execution Successful ===
```

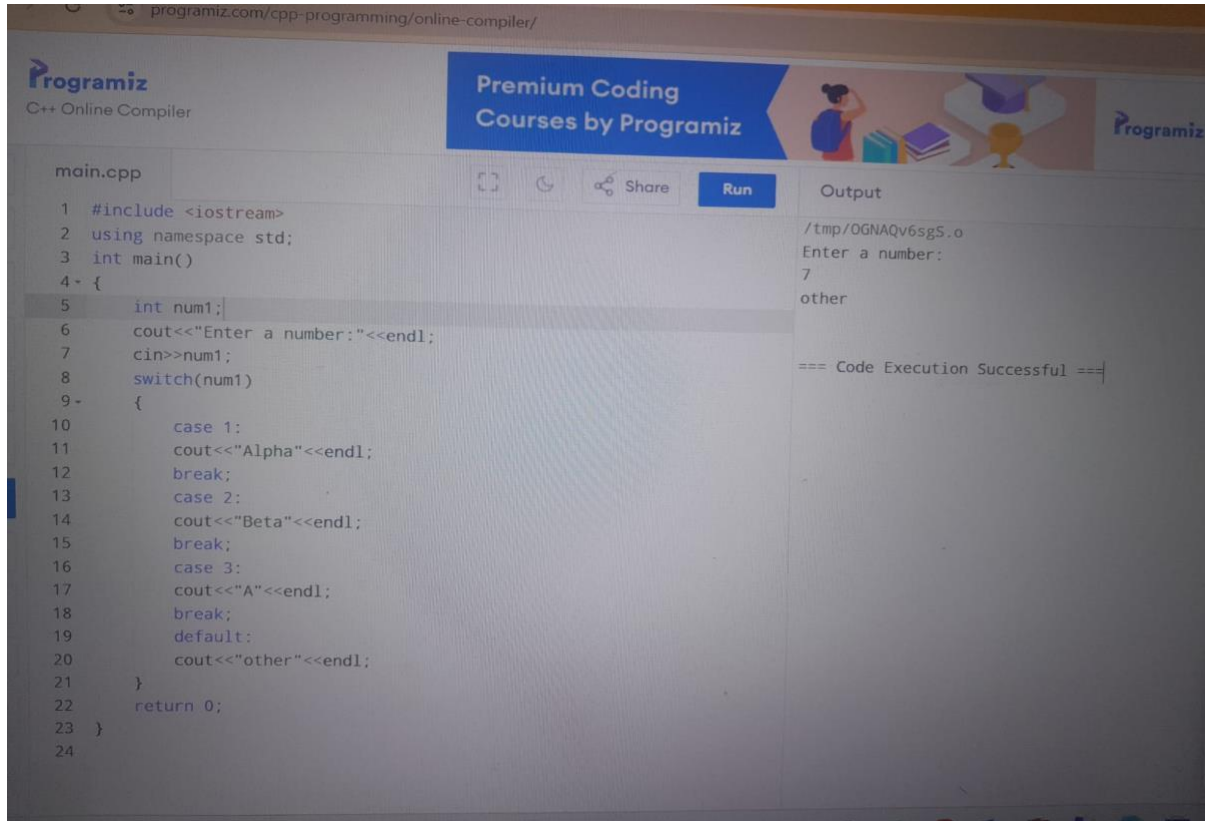


```
main.cpp
6 double amount, balance, charges;
7 cout<<"enter current balance $"<<endl;
8 cin>>balance;
9 cout<<"select service (D=deposit, W=withdraw, T=transfer):";
10 cin>>serviceType;
11 cout<<"Enter amount : $"<<endl;
12 cin>>amount;
13 switch(serviceType)
14 {
15     case 'D': case 'd':
16         charges= amount*0.005;
17         balance+=(amount-charges);
18         break;
19     case 'W': case 'w':
20         charges= amount*0.015;
21         if(amount+charges<=balance)
22             balance+=(amount+charges);
23         else
24             cout<<"Insufficient balance."<<endl;
25         break;
26     default:
27         cout<<"Invalid service."<<endl;
28 }
29 cout<<"Remaining balance: $"<<balance<<endl;
30 }
31 }

Output
/tmp/pTWYQnqNTD.o
enter current balance $
0.015
select service (D=deposit, W=withdraw, T=transfer):transfer
Enter amount : $
Invalid service.
Remaining balance: $0.015

=== Code Execution Successful ===
```

QUESTION 5:



The screenshot shows the Programiz C++ Online Compiler interface. The code editor on the left contains a C++ program named `main.cpp` that uses a `switch` statement to handle user input. The program prompts the user to "Enter a number:" and then checks if the input is 1 (Alpha), 2 (Beta), 3 (A), or any other value. The output panel on the right shows the program's execution, indicating it was successful and displaying the input "7" and the output "other".

```
main.cpp
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      int num1;
6      cout<<"Enter a number:"<<endl;
7      cin>>num1;
8      switch(num1)
9      {
10         case 1:
11             cout<<"Alpha"<<endl;
12             break;
13         case 2:
14             cout<<"Beta"<<endl;
15             break;
16         case 3:
17             cout<<"A"<<endl;
18             break;
19         default:
20             cout<<"other"<<endl;
21     }
22     return 0;
23 }
24
```

Output

```
/tmp/OGNAQv6sgS.o
Enter a number:
7
other

=== Code Execution Successful ===
```