

C++ Conditionals

Assignment Solutions



Q1- Write a program which takes the values of length and breadth from user and check if it is a square or not.

```
#include <iostream>

using namespace std;

int main()
{
    int length,breadth;
    cout<<"Enter length: "<<endl;
    cin>>length;
    cout<<"Enter breadth: "<<endl;
    cin>>breadth;

    if(length==breadth)
    {
        cout<<"It is a square"<<endl;
    }
    else
    {
        cout<<"It is a rectangle"<<endl;
    }

    return 0;
}
```

```
Q1.cpp > main()
1  #include <iostream>
2  using namespace std;
3
4  int main()
5  {
6      int length,breadth;
7      cout<<"Enter length: "<<endl;
8      cin>>length;
9      cout<<"Enter breadth: "<<endl;
10     cin>>breadth;
11
12     if(length==breadth)
13     {
14         cout<<"It is a square"<<endl;
15     }
16     else
17     {
18         cout<<"It is a rectangle"<<endl;
19     }
20
21     return 0;

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
Enter length:
5
Enter breadth:
4
It is a rectangle
PS C:\Users\Admin\Desktop\Programs\Lessonplan6conditionals> 
```

Q2- Write a program to print absolute value of a number entered by the user.

```
#include <iostream>

using namespace std;

int main()
{
    int x;
    cout<<"Enter a number"<<endl;
    cin>>x;
    if(x<0)
    {
        x = x*(-1);
    }
    cout<<"Absolute value is "<<x<<endl;
    return 0;
}
```

```

Q2.cpp > main()
1  #include <iostream>
2  int main()
3  {
4      using namespace std;
5
6      int x;
7      cout<<"Enter a number"<<endl;
8      cin>>x;
9      if(x<0)
10     {
11         x = x*(-1);
12     }
13     cout<<"Absolute value is "<<x<<endl;
14     return 0;
15 }

```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL**

```

PS C:\Users\Admin\Desktop\Programs\Lessonplan6conditionals> cd "c:\Users
if ($?) { g++ Q2.cpp -o Q2 } ; if ($?) { .\Q2 }
Enter a number
-5
Absolute value is 5
PS C:\Users\Admin\Desktop\Programs\Lessonplan6conditionals>

```

Q3- Write a program to take input from user for Cost Price (C.P.) and Selling Price (S.P.) and calculate Profit or Loss.

```

#include <iostream>

using namespace std;

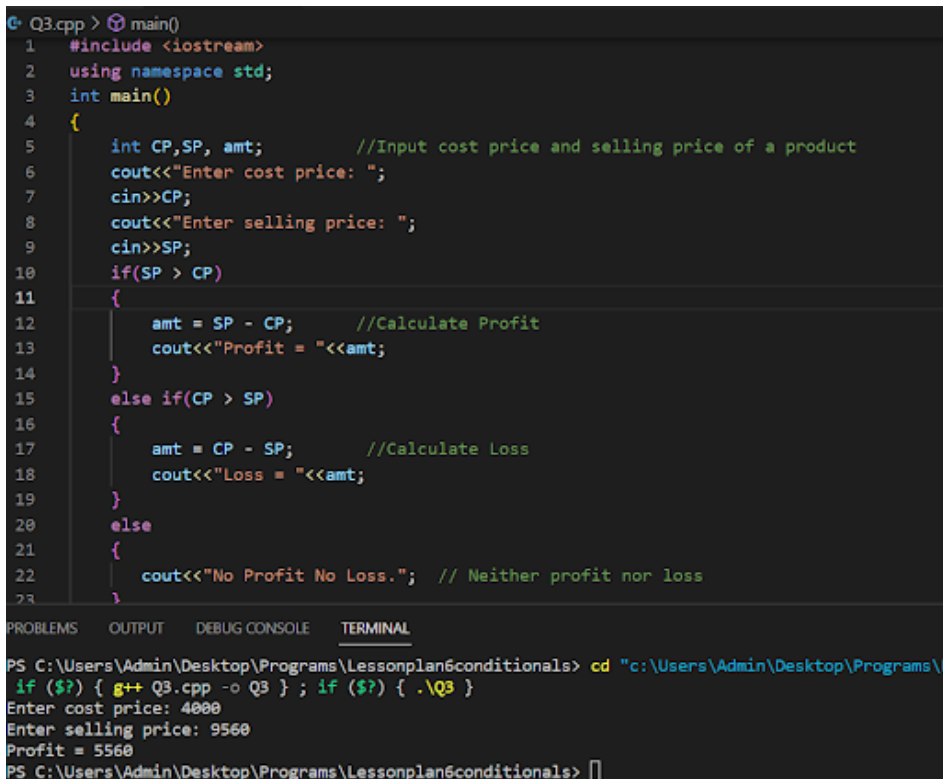
int main()
{
    int CP,SP, amt;    //Input cost price and selling price of a product
    cout<<"Enter cost price: ";
    cin>>CP;
    cout<<"Enter selling price: ";
    cin>>SP;
    if(SP > CP)
    {
        amt = SP - CP;    //Calculate Profit
        cout<<"Profit = "<<amt;
    }
}

```

```

else if(CP > SP)
{
    amt = CP - SP;           //Calculate Loss
    cout<<"Loss = "<<amt;
}
else
{
    cout<<"No Profit No Loss."; // Neither profit nor loss
}
return 0;
}

```



```

Q3.cpp > main()
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      int CP,SP, amt;           //Input cost price and selling price of a product
6      cout<<"Enter cost price: ";
7      cin>>CP;
8      cout<<"Enter selling price: ";
9      cin>>SP;
10     if(SP > CP)
11     {
12         amt = SP - CP;           //Calculate Profit
13         cout<<"Profit = "<<amt;
14     }
15     else if(CP > SP)
16     {
17         amt = CP - SP;           //Calculate Loss
18         cout<<"Loss = "<<amt;
19     }
20     else
21     {
22         cout<<"No Profit No Loss."; // Neither profit nor loss
23     }
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```

PS C:\Users\Admin\Desktop\Programs\Lessonplan6conditionals> cd "c:\Users\Admin\Desktop\Programs\Lessonplan6conditionals"
if ($?) { g++ Q3.cpp -o Q3 } ; if ($?) { .\Q3 }
Enter cost price: 4000
Enter selling price: 9560
Profit = 5560
PS C:\Users\Admin\Desktop\Programs\Lessonplan6conditionals>

```

Q4- Write a program to print positive number entered by the user, if user enters a negative number, it is skipped

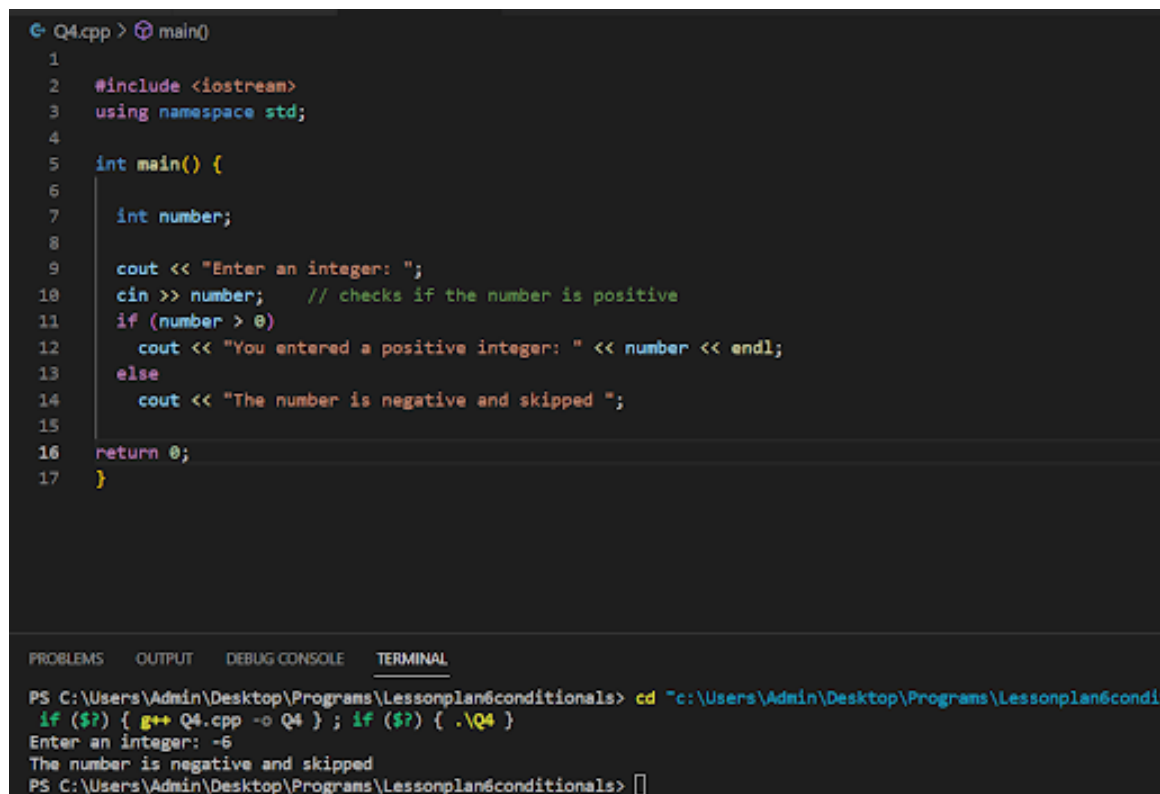
```
#include <iostream>
using namespace std;

int main() {

    int number;

    cout << "Enter an integer: ";
    cin >> number;    // checks if the number is positive
    if (number > 0)
        cout << "You entered a positive integer: " << number << endl;
    else
        cout << "The number is negative and skipped ";

    return 0;
}
```



The screenshot shows a C++ IDE with a dark theme. The top pane displays the source code for a file named Q4.cpp, with line numbers 1 through 17. The code is identical to the one shown in the previous block. The bottom pane has tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, and TERMINAL. The TERMINAL tab is active, showing the command prompt execution. The user has navigated to the directory 'C:\Users\Admin\Desktop\Programs\Lessonplan6conditionals' and compiled the program using 'g++ Q4.cpp -o Q4'. They then ran the program, which prompted 'Enter an integer: -6'. The program's output was 'The number is negative and skipped', followed by a cursor on a new line.

```
Q4.cpp > main()
1
2  #include <iostream>
3  using namespace std;
4
5  int main() {
6
7      int number;
8
9      cout << "Enter an integer: ";
10     cin >> number;    // checks if the number is positive
11     if (number > 0)
12         cout << "You entered a positive integer: " << number << endl;
13     else
14         cout << "The number is negative and skipped ";
15
16     return 0;
17 }

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL
PS C:\Users\Admin\Desktop\Programs\Lessonplan6conditionals> cd "c:\Users\Admin\Desktop\Programs\Lessonplan6condi
if ($?) { g++ Q4.cpp -o Q4 } ; if ($?) { .\Q4 }
Enter an integer: -6
The number is negative and skipped
PS C:\Users\Admin\Desktop\Programs\Lessonplan6conditionals> 
```

Q5- Create a calculator using switch statement to perform addition, subtraction, multiplication and division.

```
#include <iostream>

using namespace std;

int main() {
    char op;
    float num1, num2;
    cout << "Enter an operator (+, -, *, /): ";
    cin >> op;
    cout << "Enter two numbers: " << endl;
    cin >> num1 >> num2;

    switch (op) {
        case '+':
            cout << num1 << " + " << num2 << " = " << num1 + num2;
            break;
        case '-':
            cout << num1 << " - " << num2 << " = " << num1 - num2;
            break;
        case '*':
            cout << num1 << " * " << num2 << " = " << num1 * num2;
            break;
        case '/':
            cout << num1 << " / " << num2 << " = " << num1 / num2;
            break;
        default:
            cout << "Error! The operator is not correct";
            // operator doesn't match with any case constant (+, -, *, /)
            break;
    }

    return 0;
}
```

```
Lessonplan5conditionals > G+ Q5.cpp > ...
1  #include <iostream>
2  using namespace std;
3
4  int main() {
5      char op;
6      float num1, num2;
7      cout << "Enter an operator (+, -, *, /): ";
8      cin >> op;
9      cout << "Enter two numbers: " << endl;
10     cin >> num1 >> num2;
11
12     switch (op) {
13     case '+':
14         cout << num1 << " + " << num2 << " = " << num1 + num2;
15         break;
16     case '-':
17         cout << num1 << " - " << num2 << " = " << num1 - num2;
18         break;
19     case '*':
20         cout << num1 << " * " << num2 << " = " << num1 * num2;
21     }
22 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
PS C:\Users\Admin\Desktop\Programs\Lessonplan5conditionals> cd "c:\Users\Admin\Desktop\Programs\Less
if ($?) { g++ Q5.cpp -o Q5 } ; if ($?) { .\Q5 }
Enter an operator (+, -, *, /): -
Enter two numbers:
6
8
6 - 8 = -2
```

Q6- Write a program to calculate marks to grades . Follow the conversion rule as given below :

```
#include <iostream>
using namespace std;

int main(){
    int marks;
    cout<<"Enter Your Marks: ";
    cin>>marks;
    if (marks >= 90){
        cout<<"Your Grade is A+";
    }
    else if (marks >= 80){
        cout<<"Your Grade is A";
    }
    else if (marks >= 70){
        cout<<"Your Grade is B+";
    }
}
```



```
else if (marks >= 60){
    cout<<"Your Grade is B";
}
else if (marks >= 50){
    cout<<"Your Grade is C";
}
else if (marks >= 40){
    cout<<"Your Grade is D";
}
else if (marks >= 30){
    cout<<"Your Grade is E";
}
else if (marks <= 30){
    cout<<"Your Grade is F";
}
else{
    cout<<"Enter Valid Marks";
}
return 0;
}
```

```
Lessonplan5conditionals > G+ Q6.cpp > main()
1  #include <iostream>
2  using namespace std;
3
4  int main(){
5      int marks;
6      cout<<"Enter Your Marks: ";
7      cin>>marks;
8      if (marks >= 90){
9          cout<<"Your Grade is A+";
10     }
11     else if (marks >= 80){
12         cout<<"Your Grade is A";
13     }
14     else if (marks >= 70){
15         cout<<"Your Grade is B+";
16     }
17     else if (marks >= 60){
18         cout<<"Your Grade is B";
19     }
20     else if (marks >= 50){
21         cout<<"Your Grade is C";
22     }
23     else if (marks >= 40){
24         cout<<"Your Grade is D";
25     }
26     else if (marks >= 30){
27         cout<<"Your Grade is E";
28     }
29     else if (marks <= 30){
30         cout<<"Your Grade is F";
31     }
32     else{
33         cout<<"Enter Valid Marks";
34     }
35     return 0;
36 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
PS C:\Users\Admin\Desktop\Programs\Lessonplan5conditionals> cd "c:\Users\Admin\Desktop\Programs\Lessonplan5conditionals"
if ($?) { g++ Q6.cpp -o Q6 } ; if ($?) { .\Q6 }
Enter Your Marks: 98
Your Grade is A+
PS C:\Users\Admin\Desktop\Programs\Lessonplan5conditionals>
```