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Lab 1.1

Do Ex 1.1 in your Lab session 1. Run the program and write the output here. (2 points)

```
E:\Study Materials\C++\cpp1\x64\Debug\cpp1.exe
Now is the time for all good men
To come to the aid of their party
```

Lab 1.2

Do Ex 1.2 in your Lab session 1. Identify the syntax error. Fix that error and attach the C++ file to the assignment folder. (2 points)

Try doing exercise 4 of Ex 1.2 with the following inputs, and record the output here:

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

int main() {

    int number;
    float total;

    cout << "Today is a great day for lab";
    cout << endl << "Lets start off by typing a number of your choice" << endl;
    cin >> number;

    total = number * 2;
    cout << total << " is twice the number you typed" << endl;

    system("pause>0");
    return 0;

}
```

Input	Output
2.5	5.0
3738	7476
5.3	10.6
63	126
700.7	1401.4
100352305	2.00705e+08

(2 points) Are you getting valid output? Explain why:

We have got the valid input of integer values because there is an Int variable in our code but when it comes to floating variables we can't get the valid input because the variable needs to be in float form then we'll get the correct values of float numbers and we have got valid output because the syntax error of semi column was fixed earlier.

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

int main() {

    float number;
    float total;

    cout << "Today is a great day";
    cout << endl << "Lets start off typing a number of your choice" << endl;
    cin >> number;

    total = number * 2;
    cout << total << " is twice the number you typed" << endl;

    system("pause>0");
    return 0;
}
```

Lab 1.3

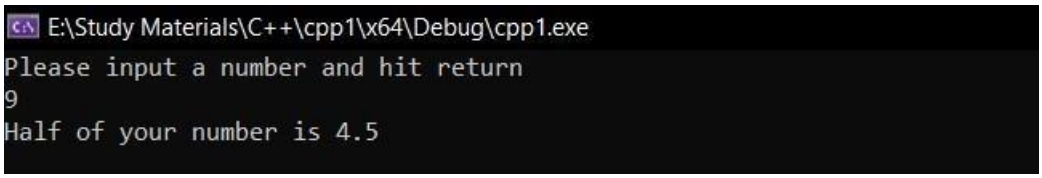
(1 point) Do exercises 1 through 3 and record the output (run time error) here:

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

int main() {


    float number;
    int divider;

    divider = 0;

    cout << "Please input a number and hit return" << endl;
    cin >> number;

    number = number / divider;
    cout << "Half of your number is " << number << endl;

    system("pause>0");
    return 0;
}
```

```
E:\Study Materials\C++\cpp1\x64\Debug\cpp1.exe
Please input a number and hit return
8
Half of your number is inf
```

(1 point) After changing the divider to 2, do exercise 4 by entering a 9 when asked for a number. Write what is printed here:

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

int main() {


    float number;
    int divider;

    divider = 2;

    cout << "Please input a number and hit return" << endl;
    cin >> number;

    number = number / divider;
    cout << "Half of your number is " << number << endl;

    system("pause>0");
    return 0;
}
```



(1 point) Do exercise 5 with these inputs:

Input	Output
64	32
72.5	36.25
591	295.5
89.37	44.685
35593.2	17796.6
1	0.5

(2 points) Are you getting valid output? Explain why:

Yes, we are getting valid inputs because we removed the logical error of the divider by replacing 0 with 2 because any number divided by 0 is infinity which is an ambiguous condition, which has been fixed here.

Lab 1.4

(1 point) Do exercises 1 to 3 and record your results here (come up with your own numbers):

```
int main() {

    float firstNumber;
    float secondNumber;

    //Prompt user to enter the first number.
    cout << "Enter the first number" << endl;
    cout << "Then hit enter" << endl;
    cin >> firstNumber;

    //Prompt user to enter the second number.
    cout << "Enter the second number" << endl;
    cout << "Then hit enter" << endl;
    cin >> secondNumber;

    //Echo print the input
    cout << endl << "You input the numbers as " << firstNumber
        << " and " << secondNumber << endl;

    // Now we will swap the values.
    firstNumber = secondNumber;
    secondNumber = firstNumber;

    // Output the values.
    cout << "After swapping, the values of the two numbers are "
        << firstNumber << " and " << secondNumber << endl;

    return 0;
```

Input		Output	
First Number	**Second Number**	**First Number**	**Second Number**
44	33	33	44
22	11	11	22
33	54	54	33
12	23	23	12
11	10	10	11
25	29	29	25

(1 points) Extra Credit: Propose a possible fix to correct this logic error.
By using a proper swapping method we can fix this logical error. Int temp =firstNumber; firstnumber =secondNumber; secondNumber=temp;

```
4   int main() {
5
6       float firstNumber;
7       float secondNumber;
8
9       //Prompt user to enter the first number.
10      cout << "Enter the first number" << endl;
11      cout << "Then hit enter" << endl;
12      cin >> firstNumber;
13
14      //Prompt user to enter the second number.
15      cout << "Enter the second number" << endl;
16      cout << "Then hit enter" << endl;
17      cin >> secondNumber;
18
19      //Echo print the input
20      cout << endl << "You input the numbers as " << firstNumber
21          << " and " << secondNumber << endl;
22
23      // Now we will swap the values.
24
25      int temp = firstNumber;
26      firstNumber = secondNumber;
27      secondNumber = temp;
28      //output the values
29      cout << "After swaping the values of two numbers are " << firstNumber << " and " << secondNumber << endl;
30
31      return 0;
```

```
Microsoft Visual Studio Debug Console
Enter the first number
Then hit enter
44
Enter the second number
Then hit enter
33

You input the numbers as 44 and 33
After swaping the values of two numbers are 33 and 44
```

Lab 1.5:

Make a program on terminal emulator. Take a character as input and check whether it is vowel or consonant.

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

int main() {
char c;
   cout << "Enter an alphabet: ";     cin
>> c;
   if(c=='a'||c=='A'||c=='e'||c=='E'||c=='i'||c=='I'||c=='o'||c=='O'||c=='u'||c=='U') {         cout <<
c << " is a vowel.";
   }     else
{
      cout << c << " is not a vowel.";
   }

   return 0;
```