



National University of Sciences and Technology (NUST)
School of Electrical Engineering and Computer Science

**Department of Computer
Science**

CS 212: Object Oriented Programming

Class: BEE-14D

Fall 2023

Lab01: Fundamentals of C++

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Time: 10:00 a.m. - 12:50 p.m. & 2:00 – 4:00 pm

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Task 1: Run the program and attach screen shot of output.

1.

The screenshot shows the 'Error List' window with the following details:
- Title bar: Error List
- Buttons: ▾, 3 Errors (highlighted), 0 Warnings, 0 Messages
- Description column: A table with three rows.
Row 1: Error C1083: Cannot open include file: 'iostream.h': No such file or directory
Row 2: IntelliSense: cannot open source file "iostream.h"
Row 3: IntelliSense: identifier "cout" is undefined

After debugging the Errors:

The screenshot shows a command prompt window with the following details:
- Title bar: C:\WINDOWS\system32\cmd.exe
- Content: 80 80Press any key to continue . . .

2.

The screenshot shows the 'Error List' window with the following details:
- Title bar: Error List
- Buttons: ▾, 4 Errors (highlighted), 0 Warnings, 0 Messages
- Description column: A table with four rows.
Row 1: Error C1083: Cannot open include file: 'iostream.h': No such file or directory
Row 2: IntelliSense: cannot open source file "iostream.h"
Row 3: IntelliSense: identifier "cout" is undefined
Row 4: IntelliSense: identifier "GetNumer" is undefined

After debugging the Errors:

The screenshot shows a command prompt window with the following details:
- Title bar: C:\WINDOWS\system32\cmd.exe
- Content: 2131Press any key to continue . . .

Reason for Errors:

1. The included library is not iostream.h but iostream. Hence forth, the compiler is unable to open the file.
2. “Using namespace std” is not included in the code which makes the compiler difficult to understand the syntax of C++ that includes cout and marks it as unidentified.
3. In the second code, there is a double declaration of function “GetNumber” that makes it difficult for the compiler to understand whether the demanded variable “y” is a long or a float.



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Task 2: Write a C++ program to print the area and perimeter of a circle.

Code:

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

int main()
{
    float radius, pi = 3.141;
    cout << "Enter the radius of circle: ";
    cin >> radius;
    cout << " The area of circle is: " << pi*radius*radius << endl;
    cout << " The perimeter of circle is: " << pi*2*radius << endl;
    system("pause");
    return 0;
}
```

Output Screenshots

```
C:\WINDOWS\system32\cmd.exe
Enter the radius of circle: 1.5
The area of circle is: 7.06725
The perimeter of circle is: 9.423
Press any key to continue . . .
```

Task 3: Write a C++ program that accepts four integers from the user and prints equal if all four are equal, and not equal otherwise.

Code:

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

int main()
{
    int Int_1, Int_2, Int_3, Int_4;
    cout << "Enter 4 integers: ";
    cin >> Int_1 >> Int_2 >> Int_3 >> Int_4;
    if (Int_1 == Int_2 && Int_1 == Int_3 && Int_1 == Int_4){
        cout << "The 4 integers are equal. \n";
    }
    else{
        cout << "The four integers are not equal. \n";
    }
    system("pause");
    return 0;
}
```

Output Screenshots

```
C:\WINDOWS\system32\cmd.exe
Enter 4 integers: 2
2
2
2
The 4 integers are equal.
Press any key to continue . . .
```

```
C:\WINDOWS\system32\cmd.exe
Enter 4 integers: 1
2
3
4
The four integers are not equal.
Press any key to continue . . .
```



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Task 4: Input five numbers and find their sum, product and average.

Code:

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

int main()
{
    float num_1, num_2, num_3, num_4, num_5;
    cout << "Enter 5 numbers: ";
    cin >> num_1 >> num_2 >> num_3 >> num_4 >> num_5;
    cout << "The sum of given numbers is: " << num_1 + num_2 + num_3 + num_4 +
num_5 << endl;
    cout << "The product of given numbers is: " << num_1*num_2*num_3*num_4*num_5 <<
endl;
    cout << "The average of given numbers is: " << (num_1 + num_2 + num_3 + num_4 +
num_5)/5 << endl;
    system("pause");
    return 0;
}
```

Output Screenshots

```
C:\WINDOWS\system32\cmd.exe
Enter 5 numbers: 1
2
3
4
5
The sum of given numbers is: 15
The product of given numbers is: 120
The average of given numbers is: 3
Press any key to continue . . .
```

Conclusion:

The following tasks allow us to understand the basic concepts and use of coding in the language C++.