EVEREST ENGNEERING COLLEGE

Sanepa, Lalitpur.



(Affiliated To Pokhara University)

**Labsheet – 1**

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ROLL NO:- 9

FACULTY:- Comp. Engneering

#. **Introduction of C++:**

C++ is a multi-paradigm programming language that supports object-oriented programming , created by Bjarne Stroustrup in 1983 at Bell Labs, C++ is an extension of C programming and the programs are written in C language can run in C++ compilers. Uses of C++ C++ is used by programmers to create computer software.

C++ can be found in today's operating systems, Graphical User Interfaces, and embedded systems. C++ is an object-oriented programming language which gives a clear structure to programs and allows code to be reused, lowering development costs.

#. **Header file:**

* A header file is a source file that has the.h extension. Header files contain the function prototypes or function declaration, whereas the source code contains the constants, macros, system-wide global variables. Whenever we require the definition of a function, then we simply include that header file in which function is declared.
* In C++ the following header file is used

“<iostream>”

Here “iostream” is a header file included by “#include” into the main program.

The header file “iostream” should be included at the beginning of all programs that use input/output statement.

#. **Preprocessor directive:**

* Preprocessor directives are lines included in a program that begin with the character #, which make them different from a typical source code text. They are invoked by the compiler to process some programs before compilation. Preprocessor directives change the text of the source code and the result is a new source code without these directives.

In C++ the commonly used preprocessor directives are

* #include
* #define
* #if
* #else

#. **Namespace:**

It is a new concept introduced by the ANSI C++ standards committee. This defines a scope for the identifiers that used in a program. For using the identifiers defined in the “namespace” scope we must include the using directive, like

using namespace std;

Here, “std” is the namespace where ANSI C++ standard class libraries are defined. All ANSI C++ program must include this directive. This will bring all the identifiers defined in “std” to the current global scope. “using” and “namespace” are the new keyword of C++.

# cin and cout

‘cin’ is an input operator in C++.

‘cout’ is an output operator in C++.

#. Variables

Variables in C++ is a name given to a memory location. It is the basic unit of storage in a program. The value stored in a variable can be changed during program execution.

* Variables in C must not start with the number; else, the Variable will not be valid.
* Blank space between variables is not allowed.
* Keywords are not allowed to define as a variable.
* As C is a case sensitive language, upper and lower cases are considered as a different variable.

#. **Operators:**

 An operator is a symbol that tells the compiler to perform specific mathematical or logical manipulations. C++ is rich in built-in operators and provide the following types of operators. This will examine the arithmetic, relational, logical, bitwise, assignment and other operators one by one.

1.WAP to print “Welcome to EEC”.

**Source code:**

#include<iostream>

using namespace std;

int main(){

cout<<"Welcome to EEC!!"<<endl;

return 0;

}

**Output**

Welcome to EEC!!

--------------------------------

Process exited after 0.08752 seconds with return value 0

Press any key to continue . . .

WAP to find the area of circle.

**Source code:**

#include<iostream>

#define PI 3.1416

using namespace std;

int main()

{

int radius;

float area;

cout<<"Enter the radius:"<<endl;

cin>>radius;

area = PI \* radius \* radius;

cout<<"Area of the circle is "<<area<<endl;

return 0;}

**Output**

Enter the radius:

5

Area of the circle is 78.54

--------------------------------

Process exited after 2.273 seconds with return value 0

Press any key to continue . . .

WAP to find the area and perimeter of rectangle.

**Source code:**

#include<iostream>

using namespace std;

int main()

{

int length, breadth, perimeter, area;

cout<<"Enter the lenght and the breadth of the rectangle:"<<endl;

cin>>length>>breadth;

area = length \* breadth;

perimeter = 2 \* (length + breadth);

cout<<"The area of the rectangle is "<<area<< endl<<"The perimeter of the rectangle is "<<perimeter<<endl;

return 0;

}

**Output**

Enter the lenght and the breadth of the rectangle:

5

6

The area of the rectangle is 30

The perimeter of the rectangle is 22

--------------------------------

Process exited after 4.857 seconds with return value 0

Press any key to continue . . .

WAP to find simple interest.

**Source code:**

#include<iostream>

using namespace std;

int main(){

int profit, time, rate;

float SI;

cout<<"Enter the profit:"<<endl;

cin>>profit;

cout<<"Enter the time:"<<endl;

cin>>time;

cout<<"Enter the rate:"<<endl;

cin>>rate;

SI = (profit \* time \* rate)/100;

cout<<"The simple intrest of the given data is "<<SI<<endl;

return 0;

}

**Output**

Enter the profit:

76

Enter the time:

7

Enter the rate:

6

The simple intrest of the given data is 31

--------------------------------

Process exited after 10.71 seconds with return value 0

Press any key to continue . . .

WAP to find the maximum number among the three number.

**Source code:**

#include<iostream>

using namespace std;

int main()

{

int n1, n2, n3;

cout<<"Enter the three numbers:"<<endl;

cin>>n1>>n2>>n3;

if(n1>n2 && n1>n3){

cout<<"The maximum number is "<<n1<<endl;

}else if(n2>n3){

cout<<"The maximum number is "<<n2<<endl;

}else{

cout<<"The maximum number is "<<n3<<endl;

}

return 0;

}

**Output**

Enter the three numbers:

4

9

2

The maximum number is 9

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Process exited after 9.684 seconds with return value 0

Press any key to continue . . .

WAP to input marks of 5 subjects of students and find the percentages considering full marks of each subject is 100.

**Source code:**

#include<iostreamm>

using namespace std;

int main()

{

int m1, m2, m3, m4, m5, p;

cout<<"Enter the marks of health."<<endl;

cin>>m1;

cout<<"Enter the marks of science."<<endl;

cin>>m2;

cout<<"Enter the marks of math."<<endl;

cin>>m3;

cout<<"Enter the marks of moral."<<endl;

cin>>m4;

cout<<"Enter the marks of social studies."<<endl;

cin>>m5;

p = ((m1+m2+m3+m4+m5)\*100)/500;

cout<<"The marks of a student and 5 given subjects are:"<<endl;

cout<<"\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_"<<endl;

cout<<"Health => "<<m1<<endl;

cout<<"Science => "<<m2<<endl;

cout<<"Math => "<<m3<<endl;

cout<<"Moral => "<<m4<<endl;

cout<<"Social => "<<m5<<endl;

cout<<"\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_"<<endl;

cout<<"The total percentage of the student is ="<<p<<endl;

return 0;

}

Output

Enter the marks of health.

56

Enter the marks of science.

87

Enter the marks of math.

69

Enter the marks of moral.

92

Enter the marks of social studies.

75

The marks of a student and 5 given subjects are:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Health => 56

Science => 87

Math => 69

Moral => 92

Social => 75

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The total percentage of the student is =75

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Process exited after 17.75 seconds with return value 0

Press any key to continue . . .

**Discussion:**

In the lab first of object oriented programming with C++ we learn some syntax and also wrote our first program. We learned about “cin” and “cout” then we also used those objects to input and output the data. I realize that C++ computer language is quite similar to C programming in some cases. We learned about some operators of C++ too.