Sheet No.1

Due Date: One week after your lab session- Complete by yourself.

Exercise 1:

Write a C++ program that outputs the following text on screen.

```
Oh  what
A happy day!
Oh yes,
What a happy day!
```

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Exercise 2:

Show the output of the following program

```
#include <iostream.h>
main( )       {
// Part A
cout<< "1  2  3  4\n";
// Part B
cout<< "1 "<< " 2 "<<" 3 "<<" 4\n";
// Part C
cout<<"1  ";
cout<<"2  ";
cout<<"3  ";
cout<<"4  "<<endl; }
```

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Exercise 3:

Show the output of the following program if you entered 8 and 10

```
#include <iostream.h>
main( )
```

```
{ int num1, num2;
  cout<<"Enter two integers:  ";
  cin>>num1>> num2;
cout<<"the sum is "<<num1+num2;
```

cout<<"\n The product is "<< num1*num2; }

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Exercise 4:

Write a C++ program that reads in the side length of a square and prints the perimeter and area.

The screen dialogue should appear as follows:

Enter the side length of the square: 10

Perimeter is 40

Area is 100

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Exercise 5:

Write a C++ program that reads in the radius of a circle and prints the circle diameter, circumference, and Area.

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Exercise 6:

The following program contains several errors:

```
#include <stream>
main
      {    cout<<" If this text ",
           cout>>" appears on your display , " ;
           cout<<" endl ; "
           cout<< you can pat yourself on
           << " the back!"<<endl.
       }
```

Resolve the errors and run the program to test your changes.

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Exercise 7:

Show the output of the following program

```
#include <iostream.h>
```

```
#include <iomanip.h>
 main( )
{
   long Cairo= 12500000, Alexandria = 4700000, Beni_Suef=150000;
   cout<< setw(12)<<"location"<<setw(12)<<"poulation"<<endl;
   cout<< setw(12)<<"Cairo"<<setw(12)<<Cairo<<endl;
   cout<< setw(12)<<"Alexandria" <<setw(12)<< Alexandria<<endl;
   cout<< setw(12) <<"Beni_Suef"<<setw(12)<<Beni_Suef<<endl;
}
```

- Enter more towns and change value of the manipulator *setw(?)* in order to have clarified output.

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Exercise 8:

What kind of program elements are the following?

A. 12 B. 'a'

C. 4.28915 D. JungleJim

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Exercise 9:

Write a program that convert the degree Fahrenheit (ftemp) to degree Celsius (ctemp) using the following formula:

ctemp=(ftemp-32)*5/9 .

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Exercise 10:

The *sizeof* operator can be used to determine to the number of bytes occupied in memory by a variable of a certain type. For example,

***sizeof* (*int*) is equivalent to 4. Write a C++ program that displays the memory space required by each fundamental type on screen.**

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Exercise 11:

What values do the following arithmatic expressions have?

a. 3/10	b. 11% 4	c. 15/2.0
d. 3 + 4 % 5	e. 3 * 7 % 4	f. 7 %4 * 3

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Exercise 12:

a. How are operands and operators in the following expression associated?

x = - 4 * i++ -6 % 4;

Insert parentheses to form equivalent expressions.

b. What value will be assigned to part to the variable x if the variable i has a value of -2?

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Exercise 13:

1. What is the exact output of the program below? Indicate a blank space in the output by writing the symbol .

```
#include <iostream.h>
main()
{
    int n = 4, k = 2;
    cout << ++n << endl;
    cout << n << endl;
    cout << n++ << endl;
    cout << n << endl;
    cout << -n << endl;
    cout << n << endl;
    cout << --n << endl;
    cout << n << endl;
    cout << n-- << endl;
    cout << n << endl;
    cout << n + k << endl;
    cout << n << endl;
    cout << k << endl;
    cout << n << k << endl;
    cout << n << endl;
    cout << " " << n << endl;
```

```
    cout << " n" << endl;
    cout << "\n" << endl;
    cout << " n * n = "; //CAREFUL!
    cout << n * n << endl;
    cout << 'n' << endl; }
```

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Exercise 14:

What is the output of the program below?

```
#include <iostream.h>
main( )
{     int n;
      cout << (n = 4) << endl;
      cout << (n == 4) << endl;
      cout << (n > 3) << endl;
      cout << (n < 4) << endl;
      cout << (n = 0) << endl;
      cout << (n == 0) << endl;
      cout << (n > 0) << endl;
      cout << (n && 4) << endl;
      cout << (n || 4) << endl;
cout << (!n) << endl; }
```

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Exercise 15:

What is the output when the following code fragment is executed?

```
int i = 5,   j = 6,   k = 7,     n = 3;
cout << i + j * k - k % n << endl;
cout << i / n << endl;
```

Exercise 16:

What is the output when the following code fragment is executed?

```
int n;
float x = 3.8;
n = int(x);
 cout << "n = " << n << endl;}
```