LAB-II#

Working with the cout and cin statement

Standard Output (cout)

By default, the standard output of a program is the screen, and the C++ stream object defined to access it is cout. cout is used in conjunction with the *insertion operator*, which is written as << (two "less than" signs).

```
1 cout << "Output sentence"; // prints Output sentence on screen
2 cout << 120;               // prints number 120 on screen
3 cout << x;                 // prints the content of x on screen
```

Standard Input (cin)

The standard input device is usually the keyboard. Handling the standard input in C++ is done by applying the overloaded operator of extraction (>>) on the cin stream. The operator must be followed by the variable that will store the data that is going to be extracted from the stream. For example:

```
1 int age;
2 cin >> age;
```

1. Fill in the code so that the program will do the following:

- ✓ Read and write your first and last name on one line.
- ✓ Read and write your address on the next line (use the endl statement).
- ✓ Read and write your city, state and zip on the next line.
- ✓ Read and write your telephone number on the next line.

```
// This program will write the name, address and telephone
// number of the programmer.
// PLACE YOUR NAME HERE
#include <iostream>
using namespace std;
int main()
{
      // Fill in this space to write your first and last name
```

```
    // Fill in this space to write your address (on new line)
    // Fill in this space to write you city, state and zip (on new line)
    // Fill in this space to write your telephone number (on new line)
    return 0;
}
```

- #include<iostream> statement, indicates which library will be needed by the program.
- Every C++ program has a **main** function which indicates the start of the executable instructions.
- Namespaces allows us to group a set of global classes, objects and/or functions under a name. If you specify **using namespace std** then you don't have to put **std::** throughout your code. The program will know to look in the std library to find the object. Namespace std contains all the classes, objects and functions of the standard C++ library.
- void main is not allowed by the C++ standard (nor the C standard) and should not even compile. The int value that main returns is usually the value that will be passed back to the operating system. 0 traditionally indicates that the program was successful.

2. Run the following code:

```
#include<iostream>
using namespace std;
int main()
{
 float x=5,y=2;
int result;
result=x % y;
cout<<result;
return 0;
}
```

Make necessary changes for a successful execution.

3. Run the code and test the output for the following code snippet:

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

int main()
{     char symbol[3]={'a','b','c'};
    for (int index=0; index<3; index++)
cout << symbol [index];
```

```
return 0;
}
```

4. What is wrong with the following program:

```
#include<iostream>
using namespace std;
 int main( )
   {
    const double PI;
    int r;
     PI = 3.14159265358979;
    r = 22;
cout<<"Area is"<<(PI*r*r);
    }
```

5. An election is contested by five candidates. The candidates are numbered 1 to 5 and the voting is done by marking the candidate number on the ballot paper. Write a C++ program to read the ballots and count the votes cast for each candidate using an array variable count. In case, a number read is outside the range 1 to 5, the ballot should be considered as a 'spoilt ballot', and the program should also count the number of spoilt ballots.
6. Write a C++ program to find the sum of series $\frac{1}{2} + \frac{2}{3} + \frac{3}{4} + \ldots + \frac{n}{n+1}$ for a given *n*
7. Write a C++ program to calculate tax, given the following conditions:
   i. If income is less than 1,50,000 then no tax
   ii. If taxable income is in the range 1,50,001-3,00,000 then charge 10% tax
   iii. If taxable income is in the range 3,00,001-5,00,000 then charge 20% tax
   iv. If taxable income is above 5,00,000 then charge 30% tax