National University of Computer and Emerging Sciences Islamabad Programming Fundamentals Lab FALL 2021

Lab Manual 06
Extraction Operators, Expressions and Precedence

Cin:

Example 2.1:

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

int main(){
        int age;
        cout<<"Enter the value of age : ";
        cin>>age;
        cout<<"The value of age is : "<<age<<endl;
}
```

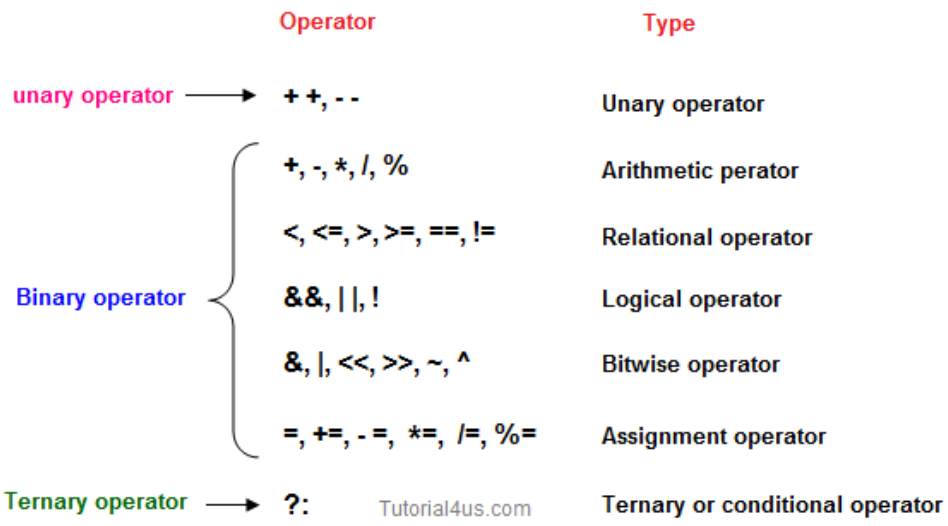
```
Enter the value of age : 23
The value of age is : 23
```

Example 2.2:

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

int main(){
        int age;
        cout<<"Enter the value of age : ";
        cin>>age;
        cout<<"The value of age is : "<<age<<endl;
        cout<<"The double of your age is : "<<age*2<<endl;
}
```

```
Enter the value of age : 20

The value of age is : 20

The double of your age is : 40
```

3) Operators:



Arithmetic Operator

Operator	Symbol	Form	Operation
add	+	x+y	add x and y
subtract	-	x-y	subtract x and y
multiply	*	x*y	multiply x and y
divide	/	x/y	divide x and y
modulus	%	x%y	mod x and y

Example 3.1:

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

int main(){
        int a, b, c, d, e;
        cout<<"Enter the value a : ";
        cin>>a;
        cout<<"Enter the value b : ";
        cin>>b;
        cout<<"Enter the value c : ";
        cin>>c;
        cout<<"Enter the value d : ";
        cin>>d;
        cout<<"Enter the value e : ";
        cin>>e;
        cout<<"The output is of the expression (a/b+c*d-e) is : "<< a/b+c*d-e<<endl;
        cout<<"The output is of the expression a/(b+c)*(d-e) is : "<< a/(b+c)*(d-e)<<endl;

}
```

```
Enter the value a : 5
Enter the value b : 4
Enter the value c : 3
Enter the value d : 2
Enter the value e : 1

The output is of the expression (a/b+c*d-e) is : 6

The output is of the expression a/(b+c)*(d-e) is : 0
```

Lab Tasks

Problem 01

Write a program that takes mass as an input and calculates the weight of an object using formula:

Weight = mass x 9.8

Choose the data types wisely.

Problem 02

Write a program that converts inches to yards and feet. Prompt the user to enter an integer value i.e. the number of inches, and then make the conversion and output the result in the following format.

03 yards: 20 feet : 45 inches

Note: 1 ft = 12 inches 1 yard = 3ft

Problem 03

Write a program that inputs the time in seconds from the user and display the time in Hours Minutes and Seconds in the following format:

03 hours: 20 mins: 45 seconds

Note: 1 hour =60 minutes and 1 min = 60 seconds

Problem 04

Ask user to enter two Boolean values and store them in two variables. Now perform all logical operators of AND, OR and NOT on the two variables and print the result. Take two more integers as input from user and apply relational operators of <, >, <=, >=, == and != on these two integers and print result for each. Please format the result properly so that the operation name and result for the operation should be displayed in new line.

Submission Instructions:

1. Save all **.cpp** files with your roll no and task number
   e.g. i20XXXX_Problem02.cpp
2. Now create a new folder with name *ROLLNO_LAB04* **e.g. i20XXXX_LAB05**
3. Move all of your .cpp files to this newly created directory and compress it into **.zip file**.
4. Now you have to submit this zipped file on Google Classroom.

THE END