PROGRAM : 01

Write a program that prints the following.

Hello Your Name!
Welcome to C++ programming.

```
# include <io stream>
Using namespace std;

int main ( )
{
   cout << " Hello Umer! " << endl;

   cout << " Welcome to C++ programming"

   return 0;

}
```

OUTPUT:-

Hello Umer!
Welcome to C++ programming

DATA TYPES :-

Numeric
- string
- character
- Boolean

→ No quotation marks

NUMERIC :-

↳ Integer (int)
e.g: 37, 69, 102

↳ (float) or (double)
e.g: 3.771, 3.1413

Integer :-

- int can store number hold upto 4 bytes can store number from :
-2,000,000,000 to +2,000,000,00 (approximately)

Unsigned int can hold upto 4bytes (only positive numbers) but that doubles the positive range between 0 - 4,000,000,000.

- float or double :-

- double → 8 bytes

- float → 4 bytes.

- STRING :- → string

A string is more than one characters surrounded by double quotes.

e.g: "Hello world"

- CHARACTER :- → char

Any single letter or symbols surrounded by single quotes.

e.g: 'a', 'f', '@'

BOOLEAN:-

↳ bool True (1)
or
False (0)
value

- To write a program first of all you have to declare a variable, assign a variable then use assigned value in cout.

- Variable assign and variable declare krtay waqt "semicolon" lagey ga end ma.

PROGRAM: 02

- Write a program that prints a num, a symbol and a name in line space.

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

int main( )

{
  int num = 2 ;

  char sym = 'A' ;

  string name = "Umer" ;

cout << "You inserted num=" << num << endl;

cout << "You inserted sym=" << sym << endl;

cout << "You instated name=" << name << endl;

  return 0;

}
```

OUTPUT:-

You inserted num = 2

You inserted sym = A

You inserted name = Umer

PROGRAM : 03

- Write a program to print any whole number.

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

int main ( )
{
  float num = 2.5 ;

  cout << num ;
  return 0;

}
```

OUTPUT :-

2.5

PROGRAM : 04

Write a program to print two types of data

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

int main( )
{
  int num1 = 7 ;

  int num2 = 5 ;

 string name = "Umer" ;

 cout << "num1 = " << num1 << endl ;

 cout << "num2 = " << num2 << endl ;

 cout << "name = " << name << endl ;

  return 0 ;

}
```

Output:-

num1 = 7

num2 = 5

name = umer

PROGRAM : 5

- Write a program in which you declare multiple variables of same type and print it.

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

int main ( )
{
  int num1 = 2 , num2 = 5 , num3 = 6;
  int num4 = 6 , num5 = 2 , num6 = 8;

  cout << num1 << num2 << num3 << num4
  << num5 << num6 ;

    return 0;

}
```

OUTPUT :-

256628

TAKE SINGLE INPUT

PROGRAM: 06

- Write a program to take an input from user and print it.

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

int main()
{
 int num1;
cout<<" Enter the value of num1: ";
cin>>num1;

cout<<" You entered : "<<num1;
 return 0;

}
```

OUTPUT:-

```
Enter the value of num1 : 100

You entered : 100
```

TAKING MULTIPLE INPUTS:

PROGRAM : 07

- Write a program in which you take multiple inputs from user and print on screen.

```
# include <io stream>
using namespace std;

int main ( )
{
  int num1, num2, num3;
cout << " Enter the value of num1,
        num2, num3:";
cin >> num1 >> num2 >> num3;

cout << " You enteied num1 = " << num1
      << endl;

cout<<" You entered num2 = "<<num2<<endl;

cout << " You entered num3 = "<<num3<<endl;
```

```
return 0;
}
```

OUTPUT:-

```
Enter the value of num1, num2, num3=↓
                                    10 20 3

You entered num1 = 10
You entered num2 = 20
You entered num3 = 30
```

CAREFUL WITH STRINGS:.

PROGRAM : 08

Write a program to ask user his/her name.

```
# include <io stream>
using namespace std;

int main ( ),
{
 string  name;
cout << "Please enter Your name:";
cin >> name;
cout << " Name You Entered is=" << name;
 return 0;

}
```

OUTPUT:-

```
Please enter Your name: Umer Ahmed
Name You Entered is= Umer Ahmed
```

PROGRAM:09

Write a program to ask user his/her name and users must be able to give his/her name in spaces.

```
# include <io stream>
using namespace std;

int main()
{
string name;
cout << " Please Enter Your Name: ";
cin >> name; getline(cin, name);
cout << " Name You Entered is = " << name;
return 0;

}
```

OUTPUT:-

```
Please Enter Your Name: Umer Ahmed

Name You Entered is = Umer Ahmed
```

ASSIGNMENT QUESTIONS

1. Write a program that stores speed of light, planck's constant, charge on electron, avagadro's number, your age, your full name, your department, your cgpa in appropriate variables and print them on console.

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

int main ( )
{
int speed of light = 3x108;

int planck's constant = 6x1034;

double electron's charge = 1.6x10-19;

int double avagadro's number = 6.023x1023;

int My age = 18;
```

```
string MY full name = "Umer Ahmed";

string MY department = "Electrical";

float CGPA = 3.6;

cout << "speed of light =" << speed of light << endl;

cout << "planck's constant =" << planck's constant
<< endl;

cout << "electron's charge =" << electrons charge
<< endl;

cout << "avagadro's number =" << avagadros number
<< endl;

cout << "MY age =" << MY age << endl;

cout << "MY full name =" << MY full name
<< endl;
```

```
cout<<"MY department = "<<MY department
<<endl;

cout<<"CGPA = "<<CGPA;
return 0;
}
```

OUTPUT:-

speed of light = 3×10^8

planck's constant = 6×10^{34}

electron's charge = 1.6×10^{-19}

avagadro's number = 6.02×10^{23}

MY age = 18

MY full name = Umer Ahmed

MY department = Electrical

CGPA = 3.6

Q-2

Re implement the same program, this time making it interactive by involving user input.

```
#include <iostream>
using name space std;

int main( )
{
int speed of light;

int planck's constant;

double election's charge;

double avagadro's number;

int My age ;

string My full name;

string Department;

float CGPA ;
```

```
cout<<"speed of light = ";
cin >> speed of light ;

cout <<"planck's constant=" ;
cin >> planck's constant ;

cout <<"electron's charge = ";
cin >> electron's charge;

cout <<"avagadro's number = ";
cin >> avagadro's number;

cout<<"MY age = ";
cin >> MY age;

cout <<"MY full name = ";
cin >> MY full name;

cout <<"MY department = ";
cin >> Department;

cout <<"CGPA = ";
cin >> CGPA;
```

```
return 0;
}
```

OUTPUT:-

speed of light = 3×10^8

planck's constant = 6×10^{3y}

electron's charge = 1.6×10^{-19}

avagadro's number = 6.023×10^{23}

MY age = 18

MY full name = Umer Ahmed

MY department = Electrical

CGPA = 3.5