

**Lecture 7: Programming Using C++****Write program:**

Welcome

To

C++

1. Write a program to write the text given above using 3 cout statement.
2. Write a program to write the text given above using 1 cout statement.

**Variables:**

- ❑ Variables are like containers in your computer's memory - you can store values in them and retrieve or modify them when necessary.
- ❑ To INITIALIZE a variable means to store a value in it for the first time, which is done using the ASSIGNMENT OPERATOR, like this:  $x = 2$

**Assignment:**

- Putting a value to a variable.

```
number = 25;
```

```
sum = 23 + 56;
```

```
number = number + 1;
```

**Naming Constants and Variables:**

Names...	Example
CANNOT start with a number	2i
CAN contain a number elsewhere	h2o
CANNOT contain any arithmetic operators...	r*s+t

CANNOT contain any other punctuation marks...	#@x%£!!a
CAN contain or begin with an underscore	_height_
CANNOT be a C keyword	struct
CANNOT contain a space	im stupid
CAN be of mixed cases	XSquared

### An Introduction to the 4 Data Types

- ❑ In C++, there are four basic DATA TYPES:
  - int (4 Bytes)
  - char (1 Byte)
  - float (4 Bytes)
  - double (8 Bytes)
- ❑ Each one has its own properties. For instance, they all have different sizes.
- ❑ We must give each variable a data type to allow and restrict the type of data we can assign to it.

### cout:

- ❑ Printing constant and variables:

...

```
int number;
```

```
number = 5;
```

```
cout<<"Number is "<< number;
```

...

Argument 1: "Number is ", format control string

Argument 2: number, the value to be printed.

**cout:****What is the output of the following statement?**

```
int number1, number2;
number1=5;
number2=8;
cout<<"number 1 =" <<number1<<"number2 ="<< number2;
```

**The int Data Type:**

```
#include <iostream>
using namespace std;
main() {
    int a,b,c,d,e;
    a = 10;
    b = 4.3;
    c = 4.8;
    d='A';
    e=4.3+4.8;
    cout<<"a="<<a<<"\n";
    cout<<"b="<<b<<"\n";
    cout<<"c="<<c<<"\n";
    cout<<"d="<<d<<"\n";
    cout<<"e="<<e<<"\n";
    cout<<"b+c="<<b+c<<"\n";
}
```

**□ The output of the example is:**

```
a=10
b=4
c=4
d=65
e=9
b+c = 8
```