Variable, Const and Declaration

Variable

syntax : *datatype variableName = value*

```
int myVariable = 100;
```

Const

syntax : *storagetype datatype variableName = value*

```
const int myVariable = 100;
```

syntax : *#define variableName value*

```
#define myVariable 100;
```

Declaration and Initialization

syntax : *storagetype datatype variableName = value*

```
int myVariable = 110;
```

OR

syntax : *storagetype datatype variableName*

```
int a, b, c
```

syntax : *variableName = value*

```
a = c = 10;
b = 20;
```

Declaration and Initialization can be done at the same time or at different time, but you must declare first and is usually done at the top and then initialize later. But it was an old practice, now there is no need to declare at top at first and then initialize

Datatypes tree

Datatypes

Types	Bits	Minimal Range
Char	8	-127 to 127
Unsigned Char	8	0 to 255
Signed Char	8	-127 to 127
Int	16 or 32	-32,767 to 32,767
Unsigned Int	16 or 32	0 to 65,535
Signed Int	16 or 32	-32,767 to 32,767
Short Int	16	-32,767 to 32,767

Datatypes (cont)

	Bits	Range
Unsigned Short Int	16	0 to 65,535
Signed Short Int	16	-32,767 to 32,767
Long Int	32	-2,147,48-3,647 to +
Long Long Int	64	$-(2^{63}-1)$ to $2^{63}-1$
Signed Long Int	32	-2,147,48-3,647 to +
Unsigned Long Int	32	0 to 4,294,-967,295
Unsigned Long Long Int	64	$2^{64}-1$
Float	32	IE-37 to IE+37
Double	64	IE-37 to IE+37
Long Double	80	IE-37 to IE+37