Variable Declarations

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Agenda

- Data Classification
- Data Types.
- Variable Declarations.
- ASCII

Data Classification

- **Different data requires different way of handling data in Computer.**

➢ **Factor responsible for data classification**

- **Memory size required to store data**
- **Method to convert data into binary for internal representation**
- **Kind of operations performed on data**

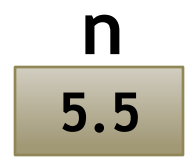
Data Types

- bool
- int
- float
- double
- char
- void

Variable Declarations

Integer → `int a=10,b;` 4 Bytes

Real → `float n=5.5;` 4 Bytes



Real → `double m;` 8 Bytes

Character → `char c1='a';` 1 Byte

1 Byte == 8 Bits

a, b, n, m and c1 are variables

ASCII

- **American Standard Code for Information Interchange**

Character encoding :-

1. ASCII → 256 (0-255)
2. Unicode
3. -------
4. -------
5. -------

int x = 5; 5 → 101

4bytes = 32bits

00000000 00000000 00000000 00000101

11111111

char c1 = 'A'

int c1 = 65

'@' 64
' ' 32
'0' 48
'1' 49
'9' 57

'a' 97
'b' 98
'z' 122

'A' 65
'B' 66
'Z' 90

float vs double

4Bytes 8Bytes

0.8

101.1100110011001100110011001100

0.8*2 = 1.6 1
0.6*2 = 1.2 1
0.2*2 = 0.4 0
0.4*2 = 0.8 0

0.8*2 = 1.6 1
0.6*2 = 1.2 1
0.2*2 = 0.4 0
0.4*2 = 0.8 0

0.8*2 = 1.6 1
0.6*2 = 1.2 1
0.2*2 = 0.4 0
0.4*2 = 0.8 0

4Bytes

8Bytes