28/06/2023

History of C

Elements

key words

Identifiers

Escape Sequence

Pritam
Sreya

printf("Pritam\b")

Pritam

printf("AAAA\bBB\bC");

A A A B C

printf("AAA\b\nB");

A A A
B

printf("AAAB\rCBBB")

B B B B

Carriage Return

printf("AAAA\bB\bC\rDD\nP\rQ");

D D A C
Q

D D A C
Q

\t Horizontal Tab

AA \t B → AA B

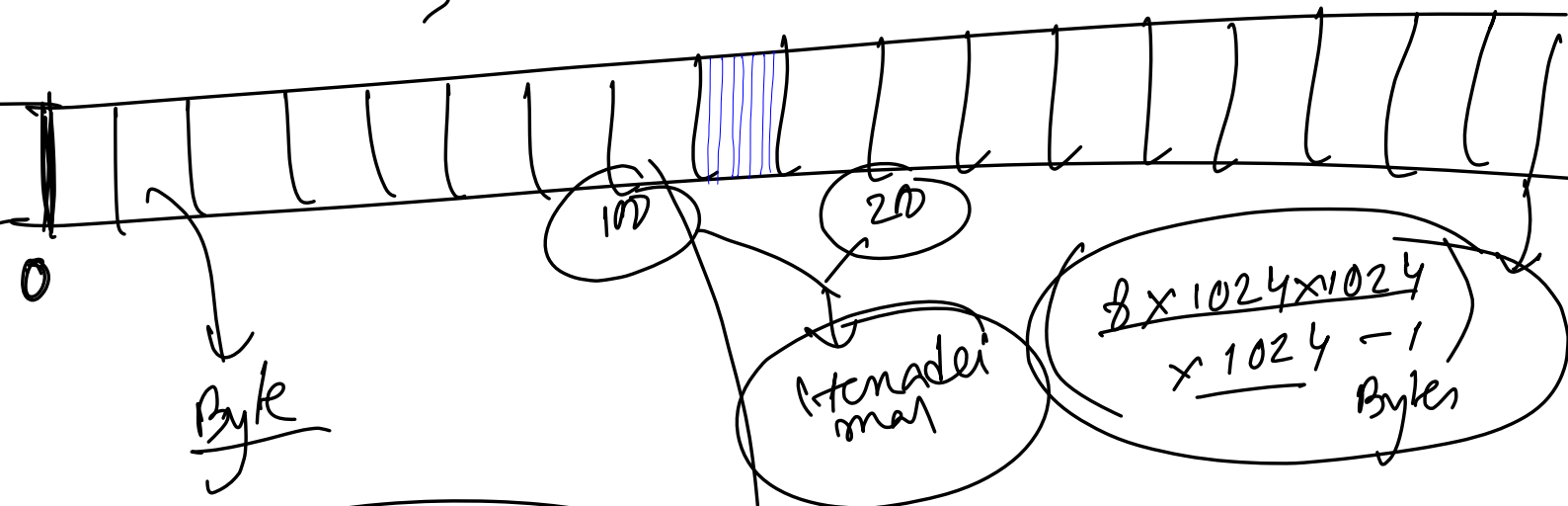
printf("\n"); → \

Data Types

int a; // variable declaration.

a = 10; // initialization of variable.

Memory → Primary Memory




Bit → 0/1

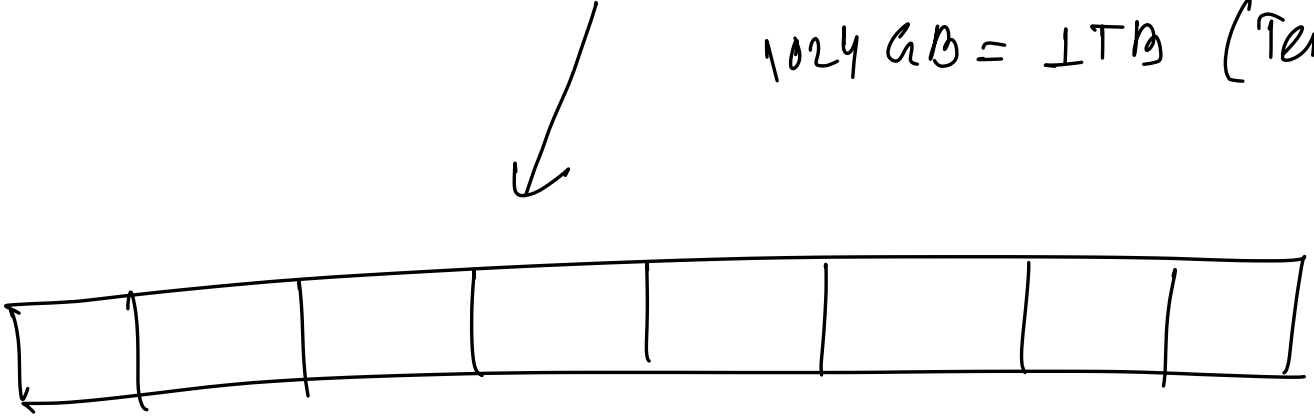
8 bit = 1 byte

1024 bytes = 1 KB (kilo B)

1024 KB = 1 MB (Mega)

1024 MB = 1 GB (Giga)

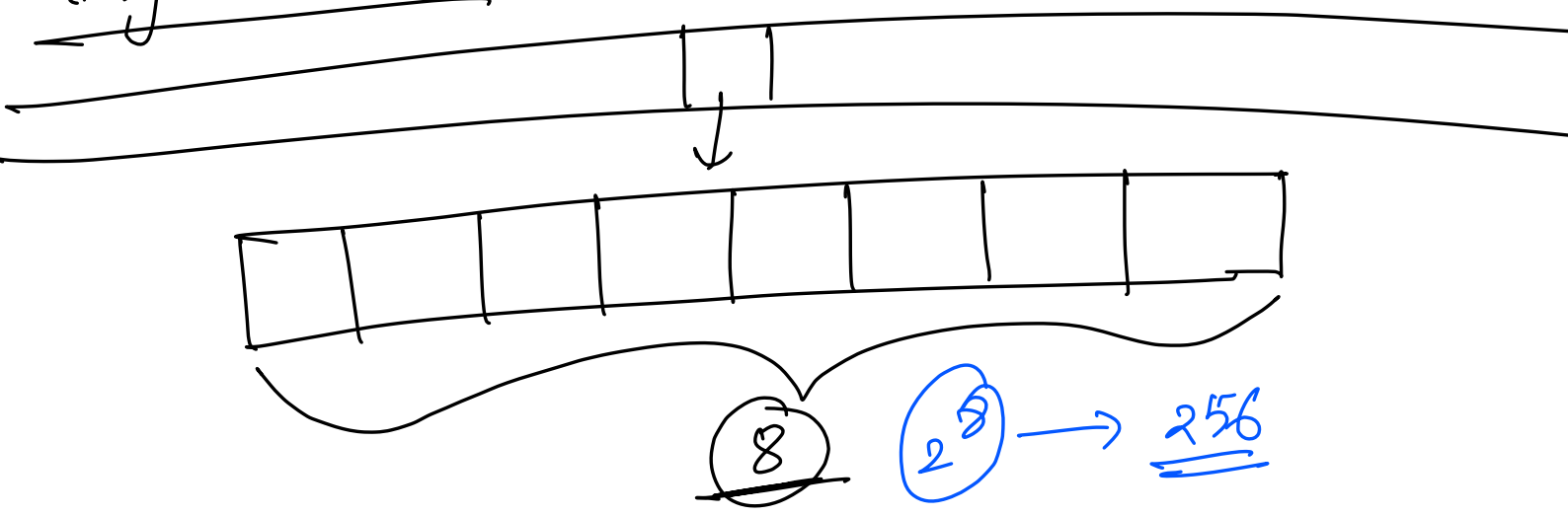
1024 GB = 1TB (Tera)



| Basic Data Types | Data Types with type qualifiers | Size (bytes) | Range |
|---|---|---|---|
| Char | signed char / char | 1 | -128 to 127 |
| | unsigned char | 1 | 0 to 255 |
| Int | signed short int / short int | 1 | -128 to 127 |
| | unsigned short int | 1 | 0 to 255 |
| | signed int / int | 2 | -32768 to 32767 |
| | unsigned int | 2 | 0 to 65535 |
| | signed long int / long int | 4 | -2147483628 to 2147483647 |
| | unsigned long int | 4 | 0 to 4294967295 |
| float | float | 4 | 3.4e-38 to 3.4e+38 |
| Double | Double | 8 | 1.7e-308 to 1.7e |
| | long double | 10 | 3.4e-4932 to 1.1e+4932 |

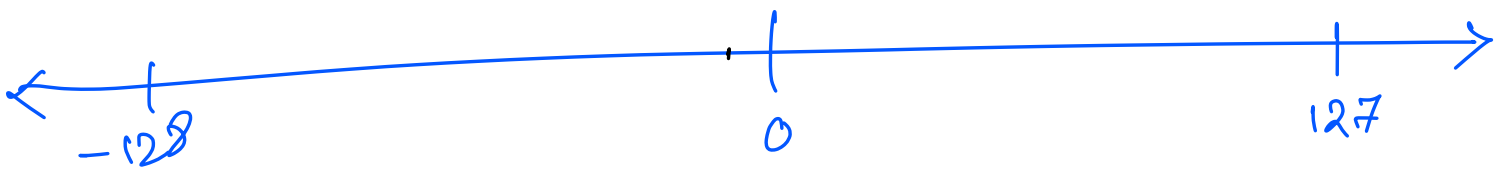
16 bit OS

1 byte = 8 bits



8

$2^8 \rightarrow 256$



# Interval

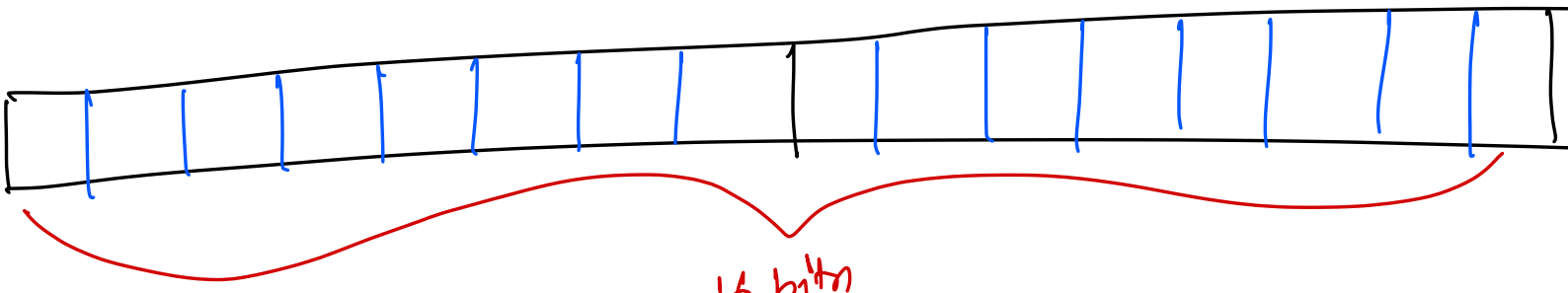
- open Interval ( )
- close Interval. [ ]
- open - close ( ]
- close - open [ )

$(0,5) \longrightarrow \{1, 2, 3, 4\}$

$[0,5] \longrightarrow \{0, 1, 2, 3, 4, 5\}$

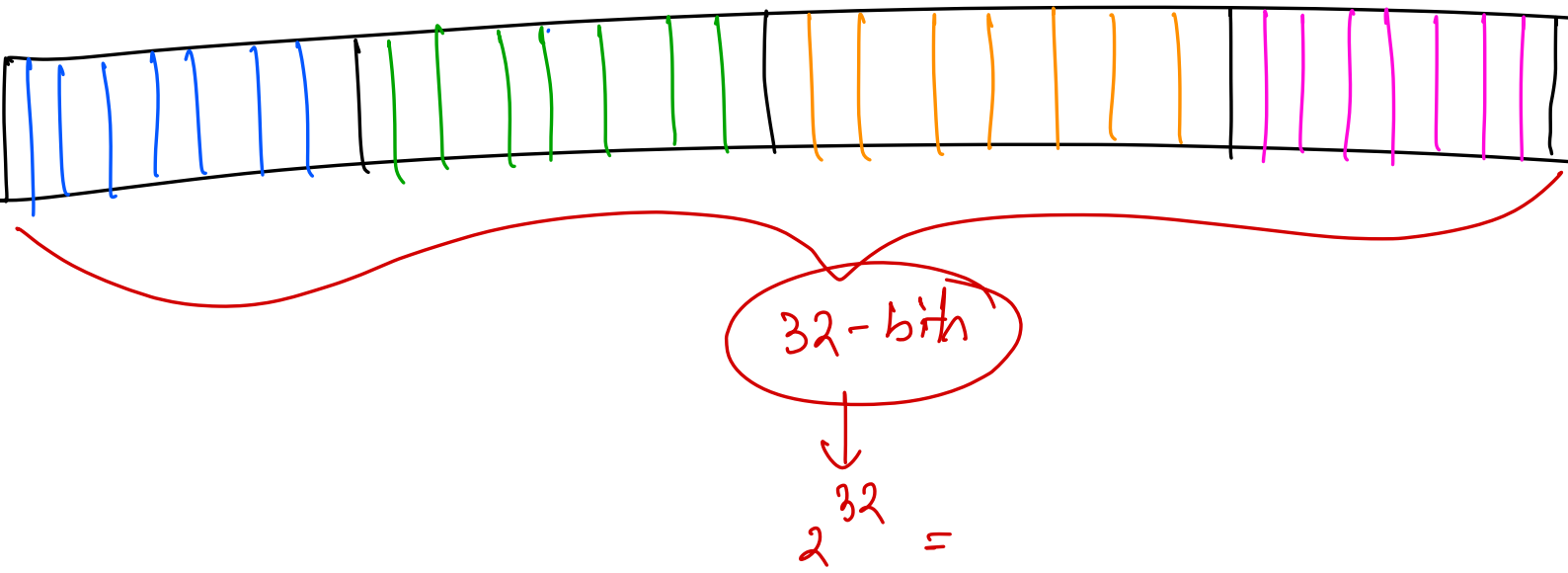
$(0,5] \longrightarrow \{1, 2, 3, 4, 5\}$

$[0,5) \longrightarrow \{0, 1, 2, 3, 4\}$.



16 bits

$2^{16} = 65536$

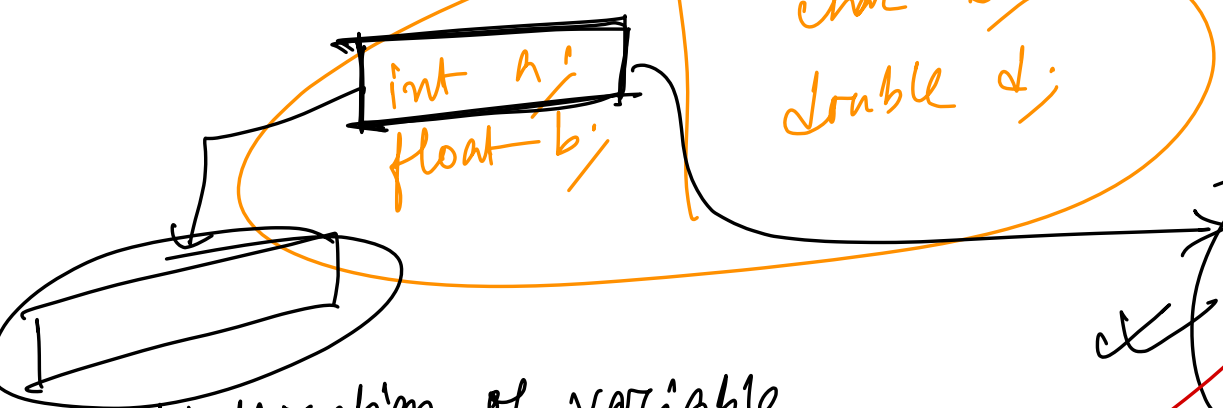



## Variables

### Declaration of variable

<data_type> <variable_name> ;

int a;




Memory has been allocated

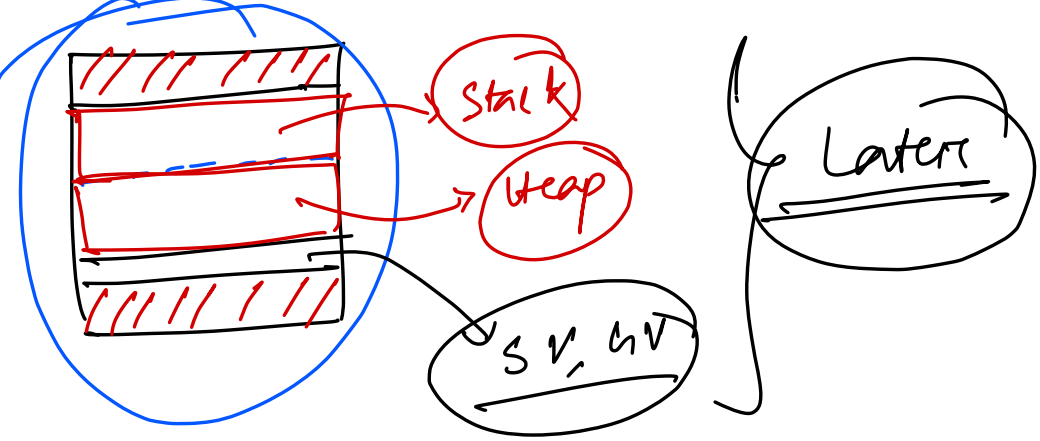
### Initialization of variable

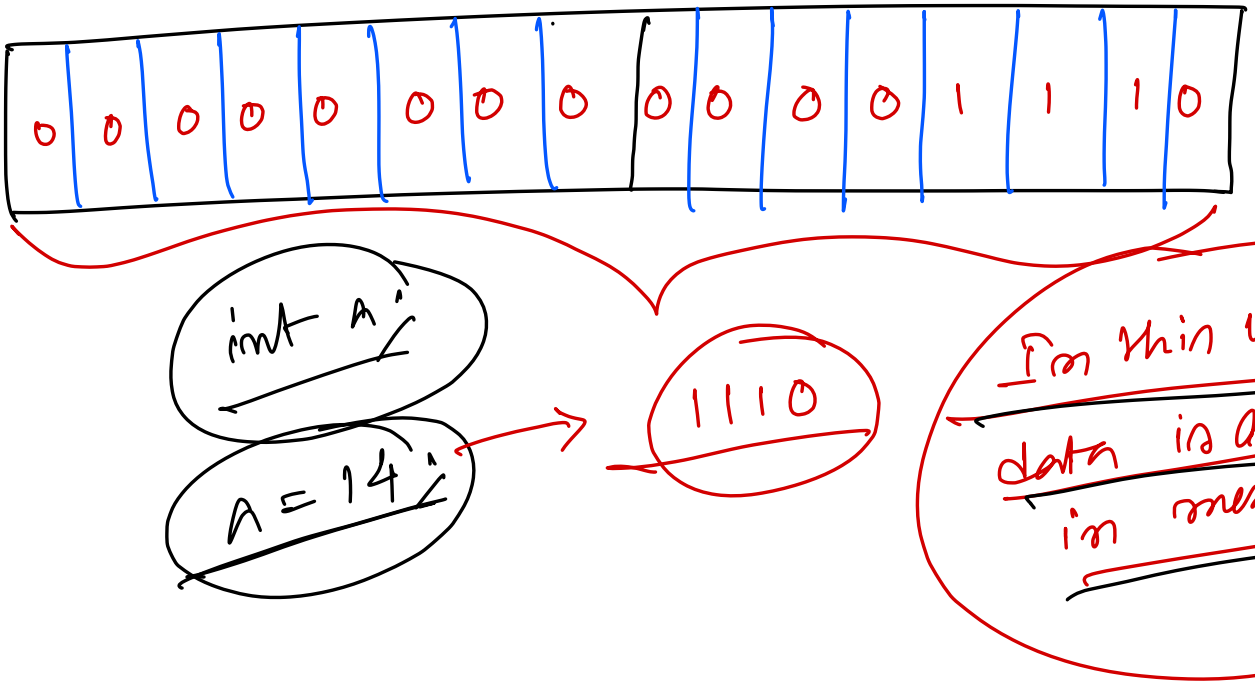
int a = 10;

Static Memory Allocation

bcz the size is fixed

Dynamic Memory Allocation (Later)


stack
Heap
S.V, G.V
Later


0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 0
int A;
A = 14;
1110
In this way data is assigned in memory.