Let's solve it

C character set *

Letters
- Uppercase A..Z
- Lowercase a...z

Symbols

comma ; semicolon : - - - %
remainder

Digits _____ 0...9

Special
characters _____ &, ^, *, +, -, /,

$y\sqrt{x}$

$( ) \rangle \{ \langle$

Whitespaces
- space Blank
- tab - New Line \n

[ ]

C Tokens

- Keywords

  char, int, float, double, long,

  if, else, break, continue, switch

  for, while, do,

  . . .

  Keywords can not be used as name of variables. (identifier)

- identifier

└ constants

        — 15.0, 100

Always: 'H'   "H"
single ↑   ↑
character   string

└ strings

     "Hello"   "H" "Hello world"   " "

└ special symbols   [ ]   { }

└→ operators   +, −, * , ...

       (+=)   (==)   (<=)   (>=) $3 <= 5$

Data Type

Type of data you want to store/retrive.

To store/retrive character

datatype $\longrightarrow$ char choice   // char stands for character

↑ identifier

choice = 'y';

Rules for identifiers

✓ Can not be a keyword

✓ First character must be an alphabet or underscore

✓ only first 31 characters are significant.

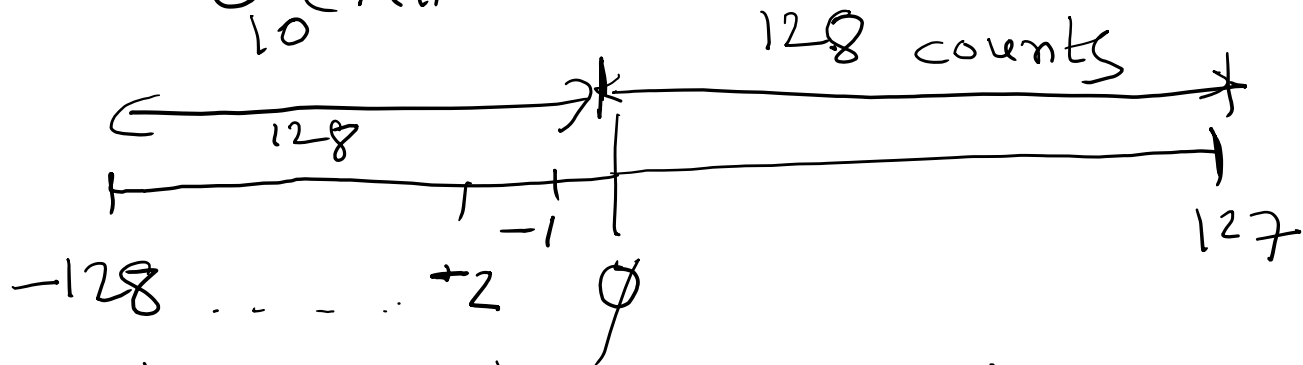✓ must consists of only letters, digits or underscore

✓ must not contain

Range of a datatype

1 byte

2^8

Unsigned   1 byte → 8 bits → 2^8 → 256 distinct values.

0_{10} (All zeroes) to $(255)_{10}$ (All 1's)

$\dfrac{256}{2} \Rightarrow 128$

128 counts

128

−128 . . . . . +2 −1 0 127

Range for a byte unsigned   0 to 255

signed   −128 to 127

-2^7 to $2^7 - 1$

-2^{8-1} to $2^{8-1} - 1 \Rightarrow -2^{n-1}$ to $2^{n-1} - 1$