# Variables

Variable is the name of a memory
location which stores some data.

Memory

| | a | | | | b | |
|---|---|---|---|---|---|---|
| | 25 | | | | S | |
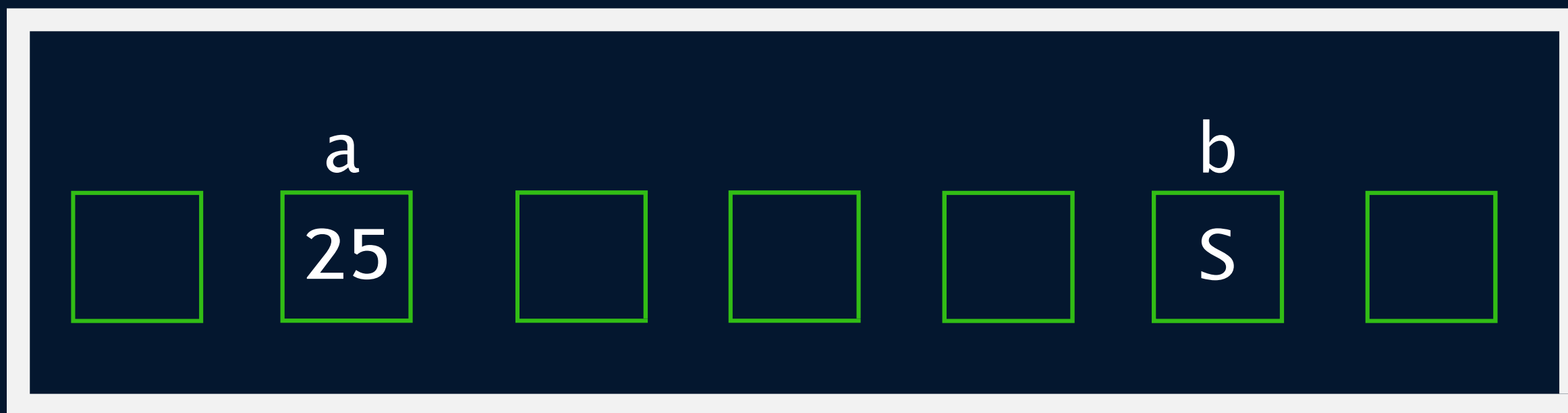
# Variables

## Rules

a. Variables are case sensitive

b. 1st character is alphabet or '_'
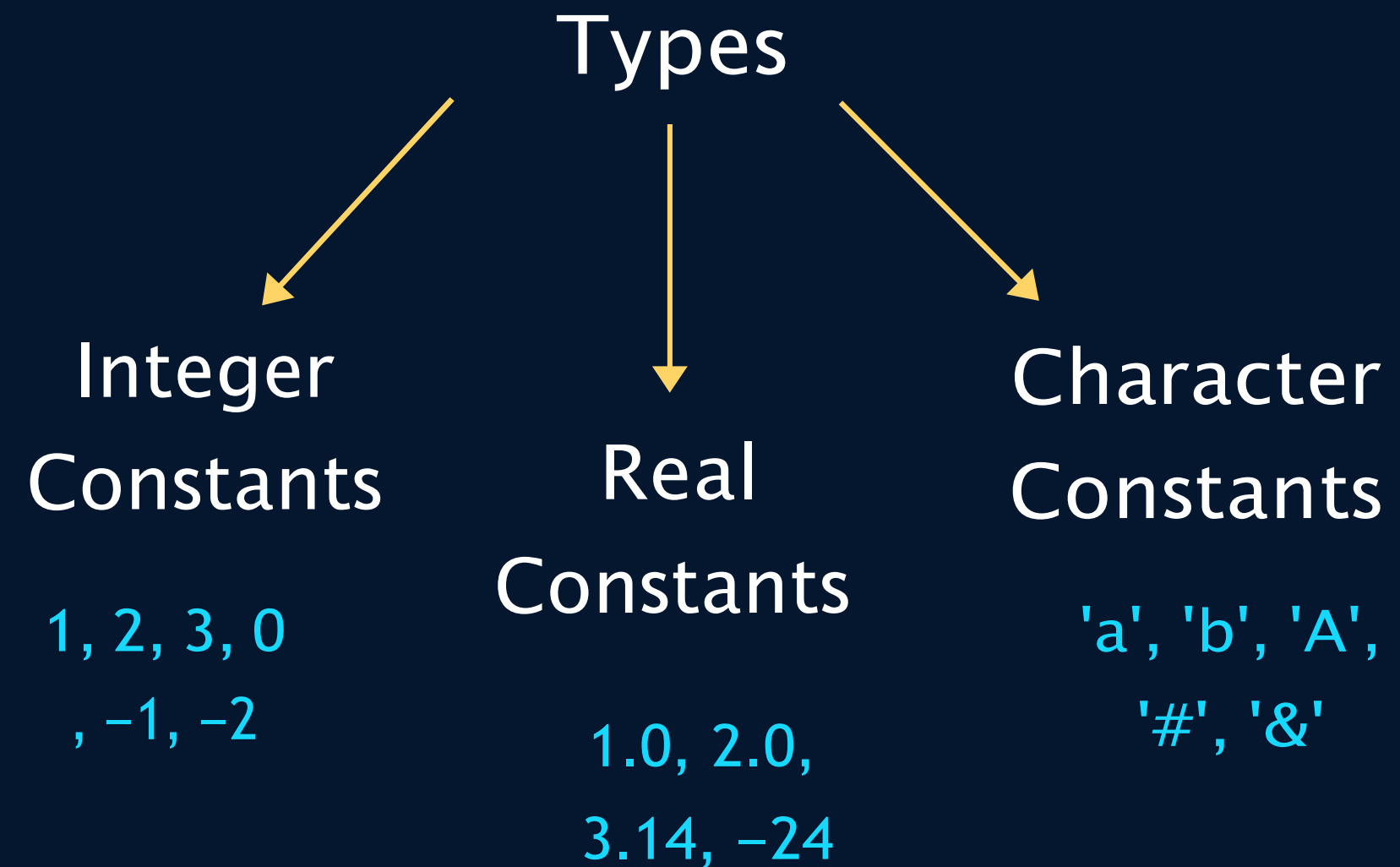
c. no comma/blank space

d. No other symbol other than '_'

# Variables
## Data Types

| Data type | Size in bytes |
| --- | --- |
| Char or signed char | 1 |
| Unsigned char | 1 |
| int or signed int | 2 |
| Unsigned int | 2 |
| Short int or Unsigned short int | 2 |
| Signed short int | 2 |
| Long int or Signed long int | 4 |
| Unsigned long int | 4 |
| float | 4 |
| double | 8 |
| Long double | 10 |

# Constants

Values that don't change(fixed)

Types

Integer Constants

1, 2, 3, 0 , −1, −2

Real Constants

1.0, 2.0, 3.14, −24

Character Constants

'a', 'b', 'A', '#', '&'

# Keywords

Reserved words that have special meaning to the compiler

32 Keywords in C

# Keywords

| | | | |
|---|---|---|---|
| auto | double | int | struct |
| break | else | long | switch |
| case | enum | register | typedef |
| char | extern | return | union |
| continue | for | signed | void |
| do | if | static | while |
| default | goto | sizeof | volatile |
| const | float | short | unsigned |

# Program Structure

```c
#include<stdio.h>


int main() {
    printf("Hello World");
    return 0;
}
```

# Comments

Lines that are not part of program

Single Line

Multiple
Line

// 

/*

*/
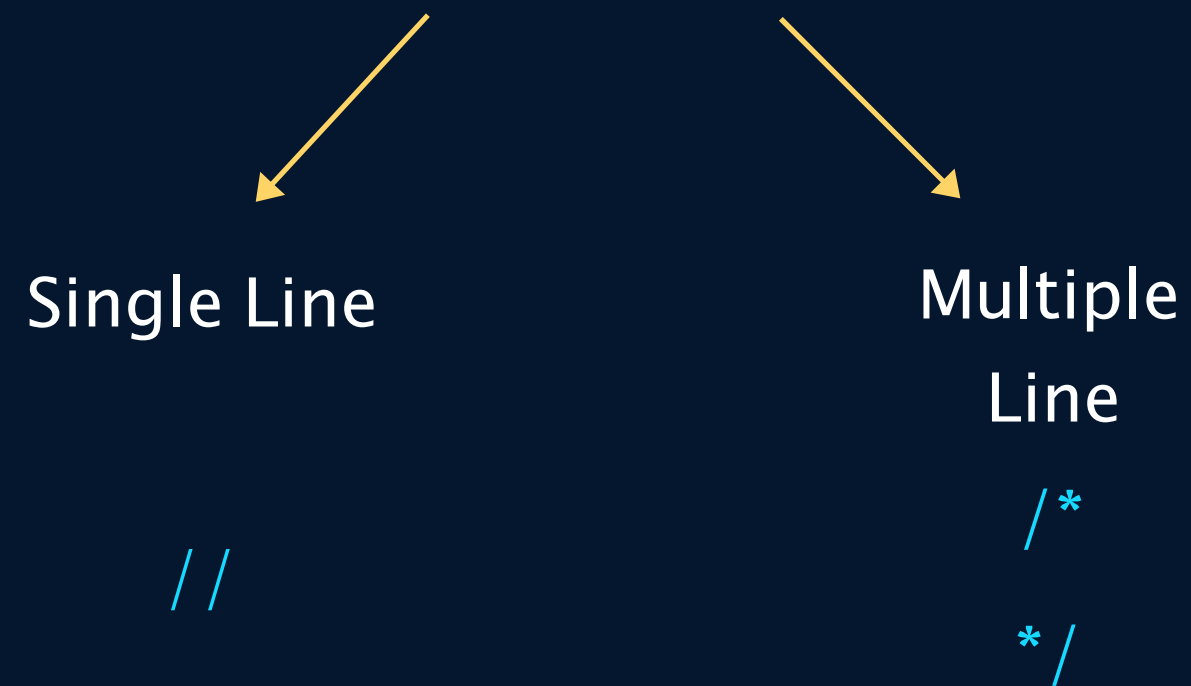
# Output

```
printf(" Hello World ");
```

new line
```
printf(" kuch bhi \n");
```

# Output

CASES

1. integers
printf(" age is %d ", age);

2. real numbers
printf(" value of pi is %f ", pi);

3. characters
printf(" star  looks like this %c ", star);

# Input

```c
scanf(" %d ", &age);
```

# Compilation

A computer program that translates C code
into machine code

Hello.c &rarr; C Compiler &rarr; a.exe (windows)
a.out (linux & mac)