

BATCH RECURSION

C AND C++

PROGRAMMING MASTERCLASS

→ Contest → (eP) ✓

AWESH ISLAM
BUET, CSE

SHAROARE HOSAN EMON
BME , BUET

আমাদের সবগুলো ক্লাস দেখার জন্য ভিজিট করো

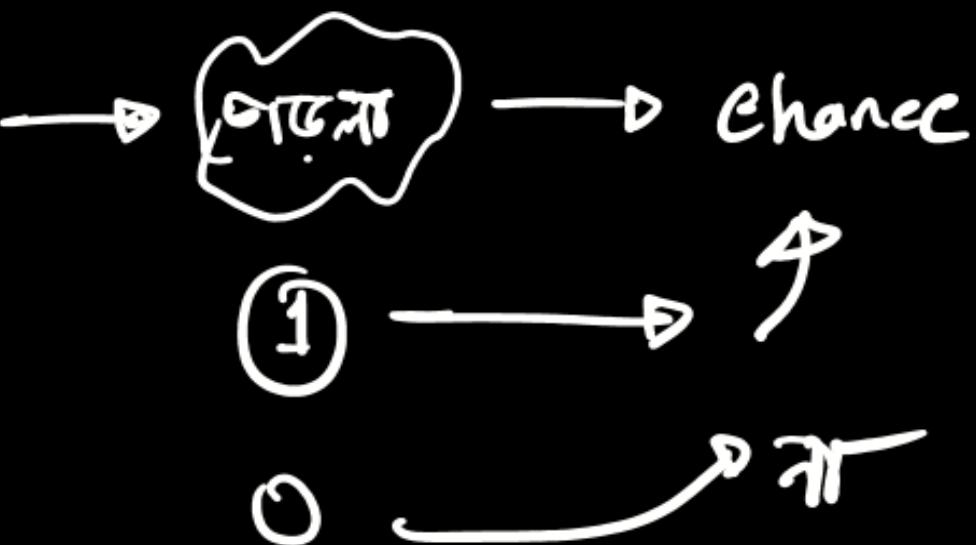
<https://www.hscocrackers.com/>



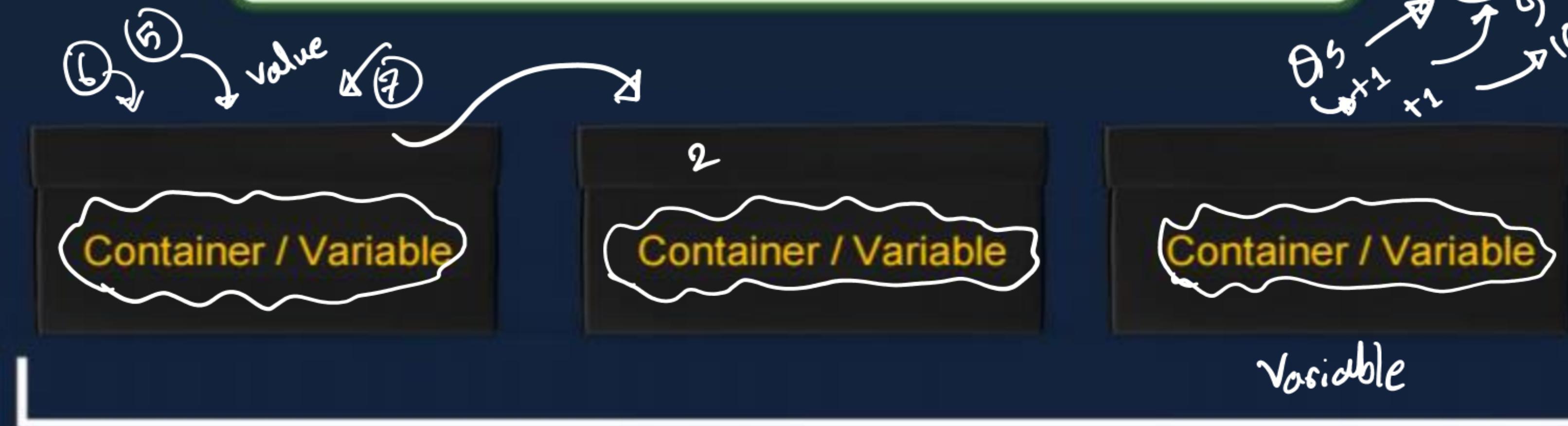
SCAN ME

Why Start with C & C++?

- ✓ Direct memory Access Possible
- ✓ Independent of Device
- ✓ We can use it in bit level

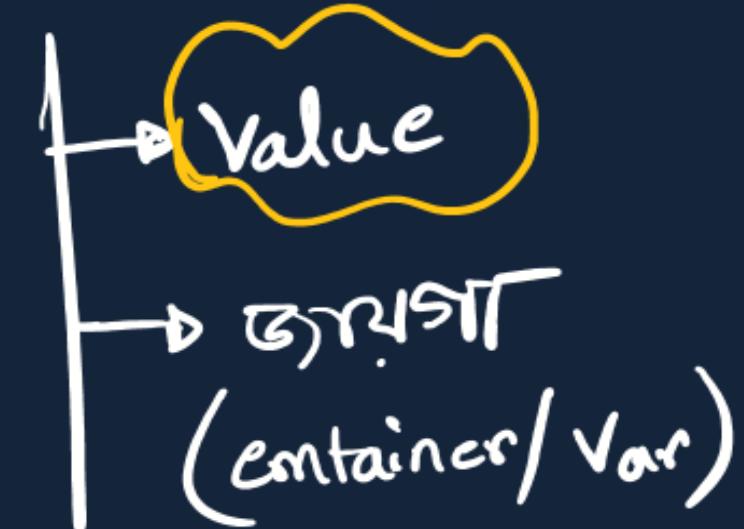


Variable



DATA

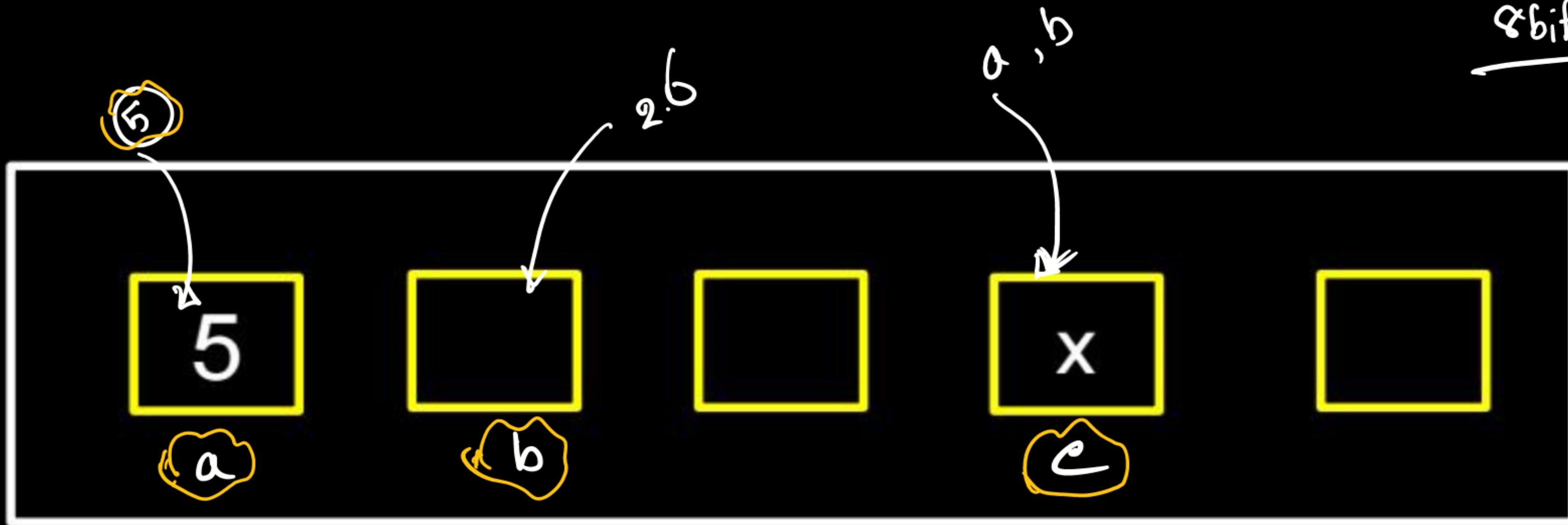
$x = 10$
 $y = 100$
 $x \in \mathbb{R}$



Variable

bit

8bit → 1 byte



Variable Name

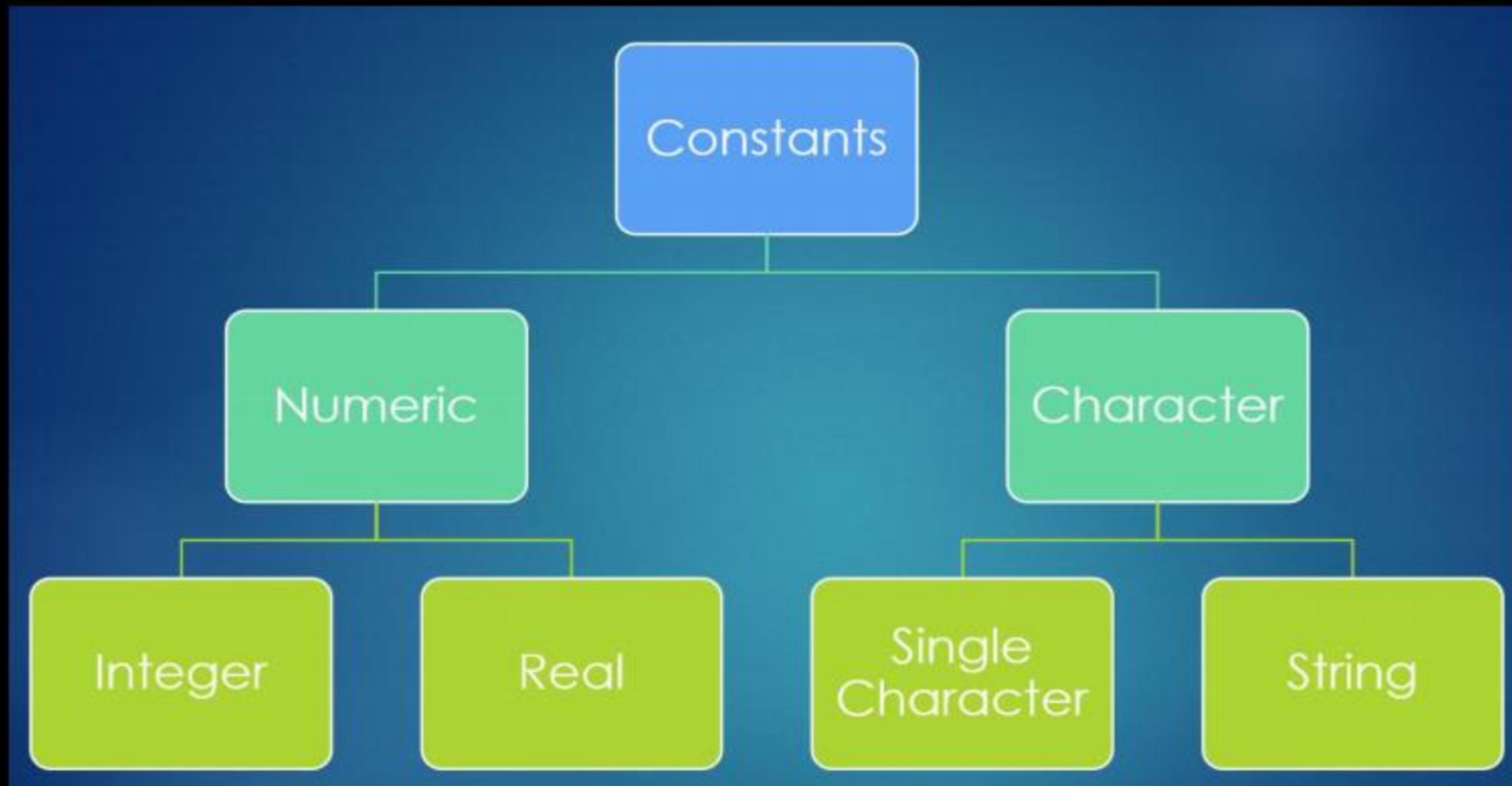
Variable Naming

- a. Variables are case sensitive
- b. 1st character is alphabet or '_'
- c. no comma/blank space
- d. Names cannot contain whitespaces or special characters like !, #, %, etc

Reserved keyword in C

Keywords in C Language			
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

Variable Type



Data Type

Data Type	Size in bytes	
char %c	1	✓
int %d	4	✓
float %f	4	✓
double %lf	8	

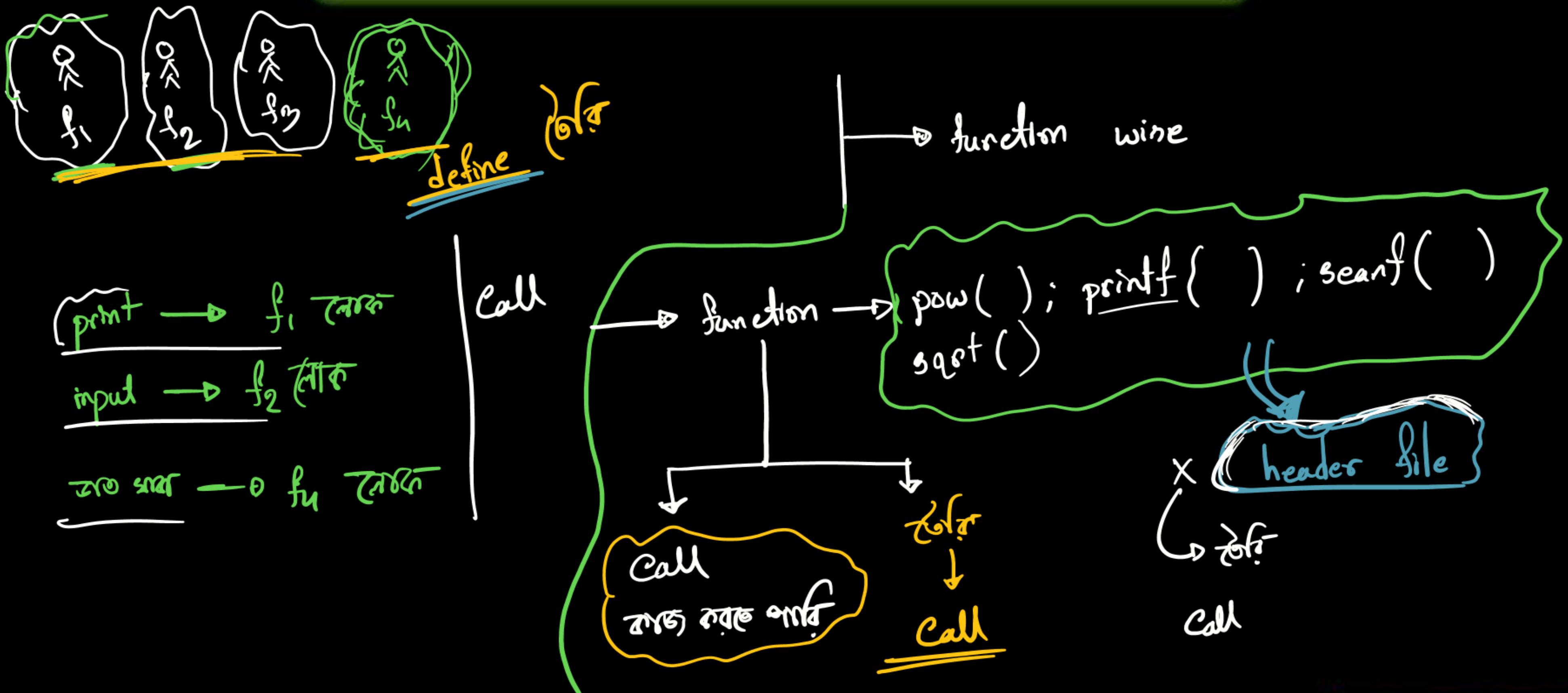
```
#include <stdio.h>

int main () {
    int a=5;
    int sharoare=24;
    float sajib=23.5;
    char arafa='c';
    double samita=25.6;
    return 0;
}
```

Constant

→ a , A
→ AGE

How Actually C Program Works



Output

Comments

Printing new Line

Problem Solving

Prob 01 : Write a C program to Print “Hello World!”

Prob 02 : Write a C program to print your name, date of birth. and mobile number.

Prob 03 : Write a C program to take 2 inputs and display their Sum

Prob 04 : Write a C program to take 2 inputs and display their multiple Calculations
Sum, Division, Sub, Mul, Remainder

Prob 05 : Write a C program to compute the perimeter and area of a rectangle with a height of 7 inches. and width of 5 inches

Expected Output:

Perimeter of the rectangle = 24 inches

Area of the rectangle = 35 square inches

Problem Solving

Prob 06 : Write a C program to compute the perimeter and area of a circle with a given radius 7

Expected Output:

Perimeter of the Circle = 37.680000 inches

Area of the Circle = 113.040001 square inches

Prob 07 : Write a C program to compute the value of 'a' take two integer input of a^b and b

Expected :

input = 22 7

output= 3.1428

Problem Solving

Prob 08 : Write a C program to display speed in m/s with input km/h

Input : 36

Expected Output: 10

Prob 09 : Write a C program to convert a given integer (in days) to years, months and days, assumes that all months have 30 days and all years have 365 days.

Test Data :

Input no. of days: 2535

Expected Output:

6 Year(s)

11 Month(s)

15 Day(s)

Problem Solving

Prob 10 : Write a C program to convert a given integer (in seconds) to hours, minutes and seconds.

Test Data :

Input seconds: 25300

Expected Output:

There are: H:M:S - 7:1:40

Prob 11 : Write a C program to display Temp in Farenhite scale while input is in Celsius ✓

Prob 12 : Write a C program that accepts two item's weight (floating points' values) and number of purchase (floating points' values) and calculate the average weight value of the items

Test Data :

Weight - Item1: 15 ✓✓

No. of item1: 5 ✓

Weight - Item2: 25 ✓✓

No. of item2: 4 ✓✓

Expected Output:

Average Value = 19.444444

Problem Solving

Prob 13 : Write a C program that accepts an employee's ID, total worked hours of a month and the amount he received per hour. Print the employee's ID and salary (with two decimal places) of a particular month.

Test Data :

Input the Employees ID(Max. 10 chars): 0342

Input the working hrs: 8

Salary amount/hr: 15000

Expected Output:

Employees ID = 0342

Salary = U\$ 120000.00

254

$2 \times 5 \times 4 \Rightarrow$

$24 \rightarrow 2 \times 4 = 8$

Prob 13 : Write a C Program that accepts a 2 digit integer and shows the total multiplications of all it's digit

Input :

23

Expected Output:

6

Brain Teaser

Tonmoy likes beautiful value . Beautiful ~~numbers~~^{value} are made by the sum of its all integer's square value . Suppose if a number is 3204 then the beautiful value is $3^2 + 2^2 + 0^2 + 4^2 = 29$. Take a input of a integer and print the beautiful value . Assume user will give you a 4 digit integer

Test Data 1:

Input : 3204 ✓

Expected Output:

Beautiful Value = 29 ✓

Test Data 2:

Input : 1001 ✓

Expected Output:

Beautiful Value = 2 ✓

Test Data 3:

Input : 9999

Expected Output:

Beautiful Value = 324

