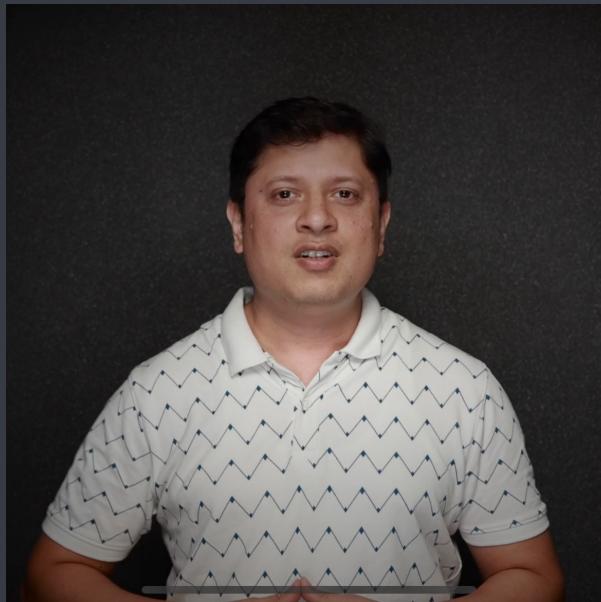


# C Language

## Input and output instruction in C



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# Agenda

- ① About C language
- ② printf()
- ③ Write your first Program.
- ④ Escape Sequences
- ⑤ Format Specifiers
- ⑥ scanf()

## About C language

- ① C is a block structured programming language
- ② A c program can have any number of blocks
- ③ Usually outermost blocks are functions
- ④ function has some name for identification
- ⑤ Even the smallest C program has one function
- ⑥ All function names must be different
- ⑦ If there is only one function its name must be main()
- ⑧ If there are more than one function in the program then also one function name must be main.

## About C language

- ⑨ You can write declaration statements inside a block (function) or outside all functions.
- ⑩ Local variables vs Global variables
- ⑪ Action statements can reside only inside the block (function)
- ⑫ C is a case sensitive language.  
`int a;` <sup>lower case</sup>  
`A=5;` <sup>error</sup>   
<sup>Uppercase</sup>

int x; ← Global variable  
Global declaration

main()  
{  
 int a; ← local variable  
 Local declaration

{

f1()

{

int b; ← Local variable  
Local declaration

{

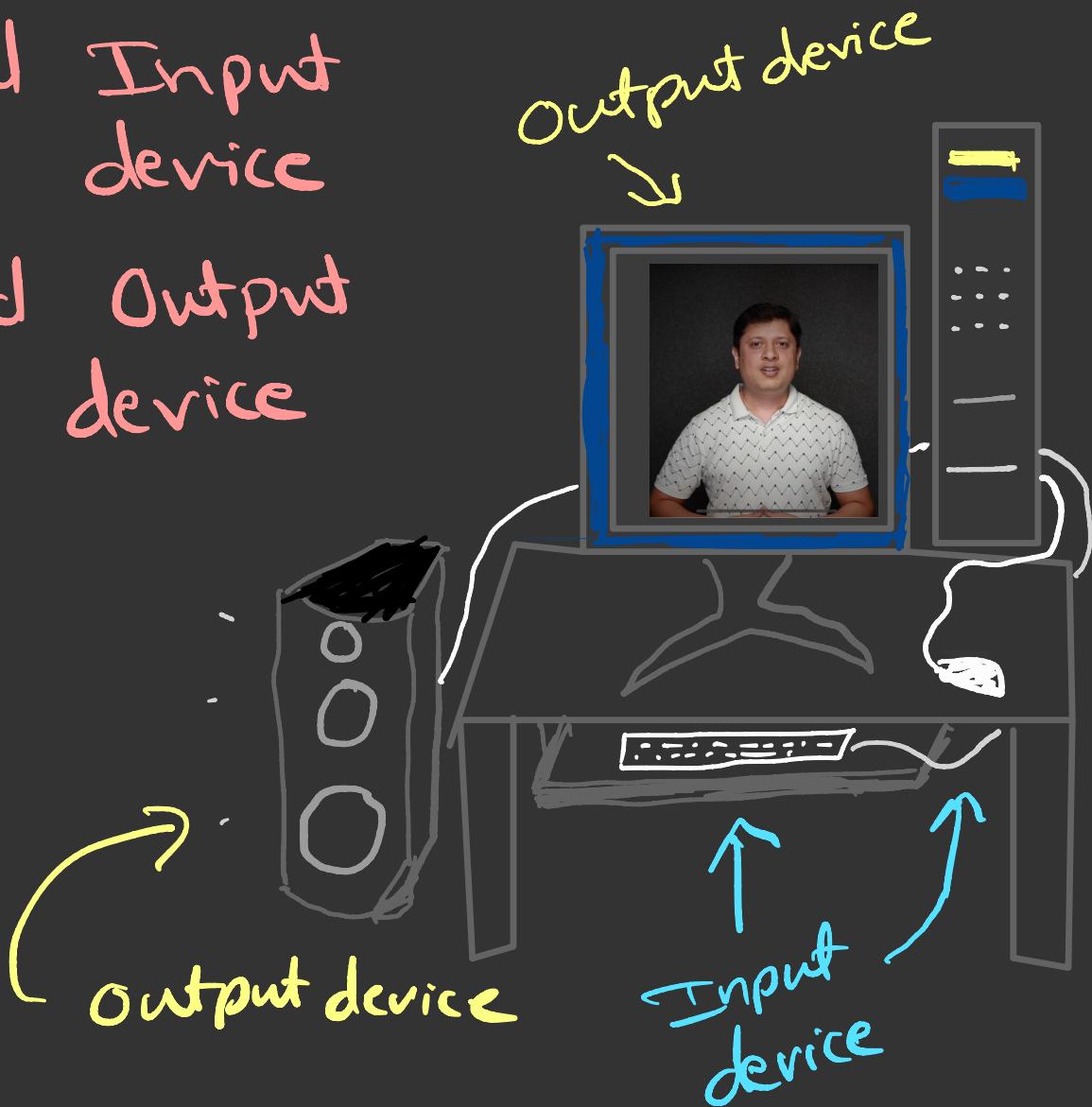
# Action Statements

- ① Input & Output instructions
- ② Arithmetic Instruction
- ③ Control Instruction

## Standard Input & Output devices

Keyboard → standard Input device

Monitor → standard Output device



{

→

LCMC());

====

LCMC());

{

LCMC();

{

====

}

## Output Instruction

printf() → predefined function

printf() is used to print some text on the monitor.

printf("Hello");

printf()  
{

printf()

① to print text

② to print value of a variable or  
an expression.

==

}

You can call a function any number of times

but can define only once

Write a program to print **Welcome** on the screen.

```
#include<stdio.h>
int main()
{
    printf("Welcome");
    return 0;
}
```

Write a program to print welcome on the screen.

```
#include<stdio.h>
int main()
{
    printf("Welcome");
    return 0;
}
```

Write a program to print **welcome** **students** on the screen. Print **welcome** on the first line and **Students** on the second line.

```
printf("Welcome");
printf("\n");
printf("Students");
```

welcome  
Students

or

```
printf("welcome\nStudents");
```

Write a program to print **welcome students** on the screen. Print **welcome** on the first line and **Students** on the second line.

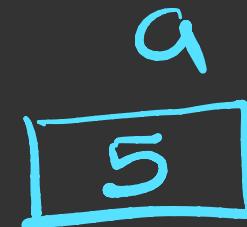
```
#include<stdio.h>
int main()
{
    printf("Welcome\nStudents");
    return 0;
}
```

# Escape Sequences

- \n new line
- \t tab space
- \b back space
- \r carriage return
- \f form feed
- \\" print \\"
- \\" print \"
- \' print '

Write a program to print value  
of a variable.

```
#include <stdio.h>
int main()
{
    int a=5;
    printf("%d", a); 5
    return 0;
}
```



printf(a); Wrong  
printf("5"); 5  
printf("a"); a

Write a program to print value of a variable.

```
#include<stdio.h>
int main()
{
    int a=5;
    printf("%d", a);
    return 0;
}
```

Format String

## Format Specifiers

- %d int
- %c char
- %f float
- %lf double

Write printf statement to print  
following on the screen.

Consider  $\rightarrow$  int a=5, b=6;

- ① 5 6       $\text{printf}(" \%d \%d", a, b);$
- ② a=5 and b=6       $\text{printf}(" a=%d and b=%d", a, b)$
- ③ a=6 & b=5       $\text{printf}(" a=%d \& b=%d", b, a)$
- ④ Value of a is 5 and value of b is 6
- ⑤ Sum of 5 and 6 is 11
- ⑥  $5+6=11$        $\text{printf}(" \%d + \%d = \%d", a, b, a+b);$
- ⑦  $\text{printf}(" \text{Value of } a \text{ is } \%d \text{ and value of } b \text{ is } \%d", a, b);$
- ⑧  $\text{printf}(" \text{sum of \%d and \%d is \%d}", a, b, a+b);$

Write printf statement to print  
following on the screen.

Consider → int a=5, b=6;

- ① 5 6       $\text{printf}(" \%d \%d", a, b);$
- ② a=5 and b=6  $\text{printf}(" a=%d \text{ and } b=%d", a, b);$
- ③ a=6 & b=5  $\text{printf}(" a=%d \& b=%d", b, a);$
- ④ Value of a is 5 and value of b is 6  $\downarrow$  expression
- ⑤ Sum of 5 and 6 is 11  $\rightarrow$   $\text{printf}(" \text{sum of \%d and \%d is \%d"}, a, b, a+b);$
- ⑥  $5+6=11$      $\text{printf}(" \text{sum of \%d and \%d is \%d"}, a, b, a+b);$

$\text{printf}(" \text{value of a is \%d and value of b is \%d"}, a, b);$

$\text{printf}(" \%d + \%d = \%d", a, b, a+b);$

scanf()

scanf() → predefined function

scanf("%d", &a);  
                    ↑ address of

Write a program to calculate sum of  
two integers.

Write a program to calculate sum of two integers.

```
#include<stdio.h>
int main()
{
    int a,b,c;
    printf("Enter two numbers");
    scanf("%d %d", &a, &b);
    c=a+b;
    printf("Sum of %d and %d is %d", a, b, c );
    return 0;
}
```