

# C Language LIVE Community Classes

Function

Day-14

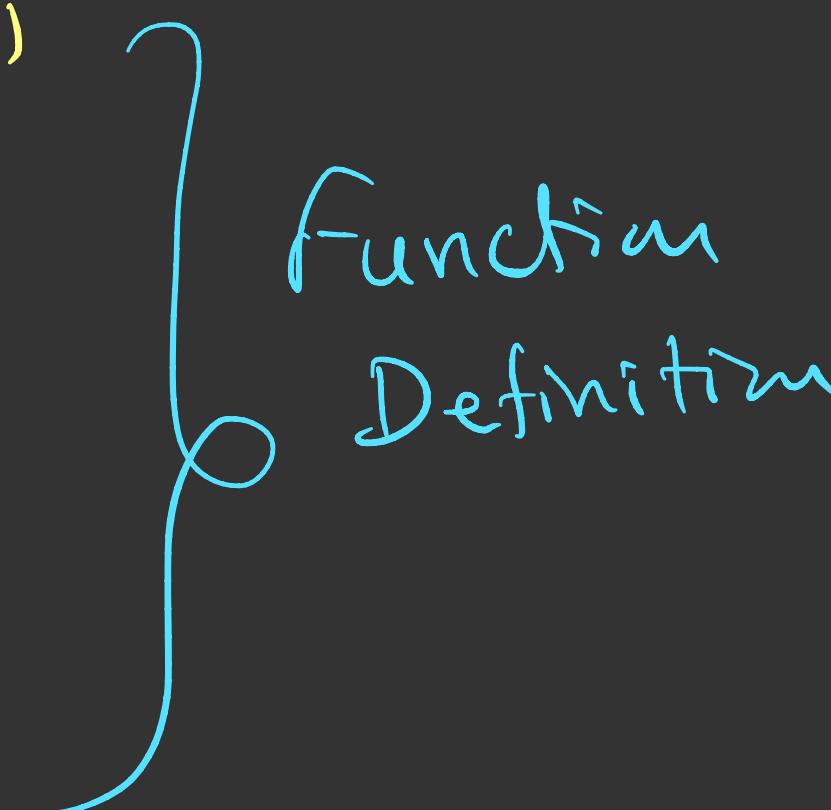
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## What is a function?

- Function is a block of code, which has some name for identification.

```
functionName()  
{  
    —  
    —  
    —  
    —  
}  
}
```

Function  
Definition

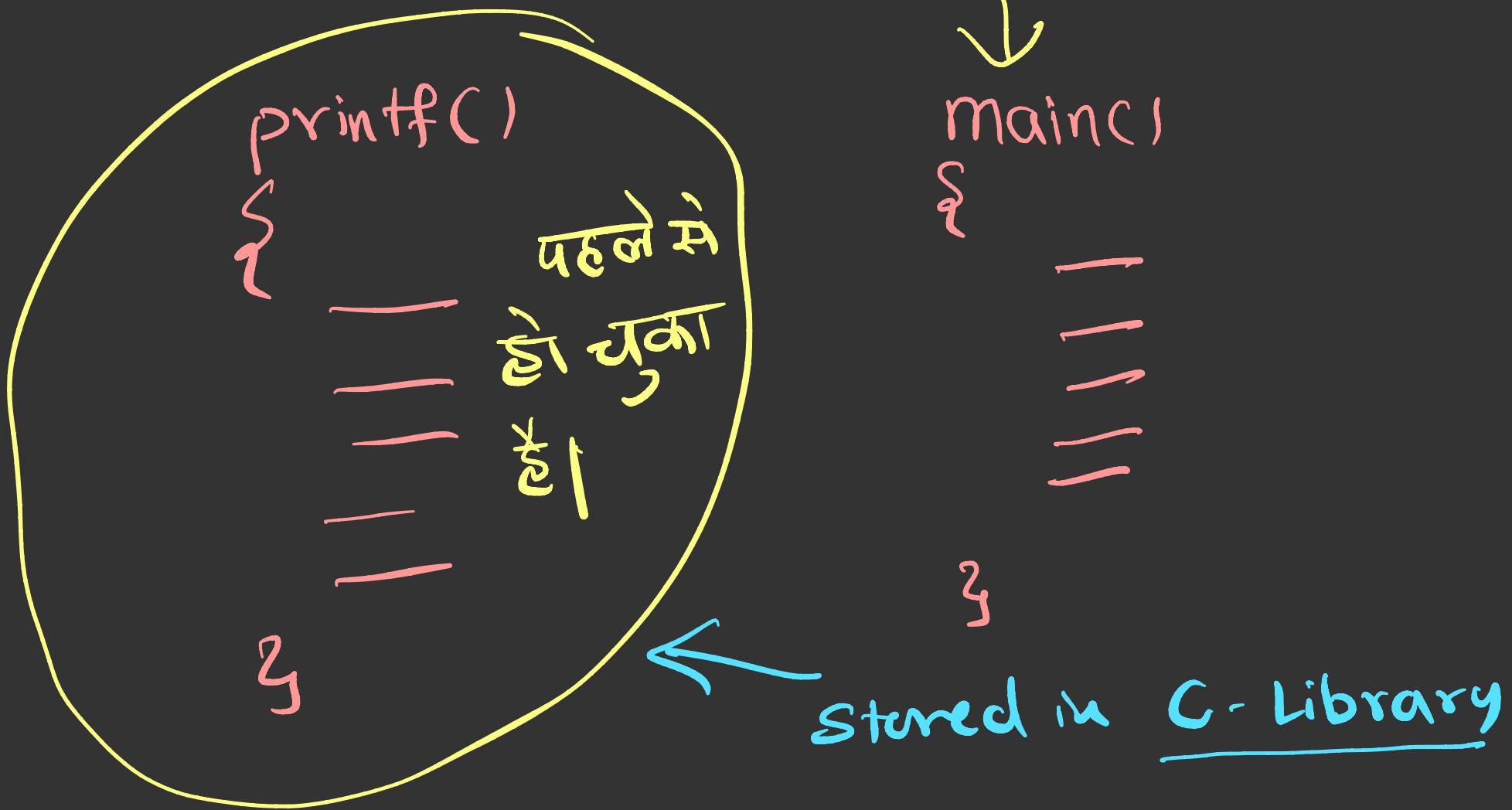


## Functions

- Even in the smallest C program , there is at least one function.
- All function names must be unique
- One function name must be main()
- You can define functions in any sequence.
- No Keyword in function
- OS calls main() function to begin execution of program

Functions are of two types

- ① Predefined Functions      `scanf()` `printf()` `getch()`  
`exit()` `putsc()` `gets()` `malloc()`  
`alloc()`
- ② Userdefined Functions



# Program with multiple functions

```
main()
{
    a();
    b();
    a();
}

a()
{
    printf("Hello");
}

b()
{
    printf("Bye");
}

a();
```



printf()  
{  
—  
—  
—  
2

Hello Bye HelloHello

## Ways to define a function

- ① Takes Nothing, Returns Nothing (TNRN)
- ② Take Something, Returns Nothing (TSRN)
- ③ Takes Nothing, Return Something (TNR\$)
- ④ Take Something, Return Something (TSRS)

```
#include <stdio.h> TN RN
void add();
int main()
{
    add(); ← Function call
    return 0;
}

void add() // Empty parenthesis means TN
           (Takes Nothing)
{
    int a,b,c;
    printf("Enter two numbers");
    scanf("%d %d", &a, &b);
    c=a+b;
    printf("Sum is %d", c);
}
           // No return keyword means RN
           (Returns Nothing)
```

## TSRN

```
#include<stdio.h>
void add(int, int);
int main()
{
    int x, y;
    printf("Enter two numbers");
    scanf("%d %d", &x, &y);
    add(x, y); // Call by value
    return 0;    ← Actual arguments
}
void add(int a, int b) ← a, b formal argument
{
    int c;
    c = a + b;
    printf("Sum is %d", c);
}
```

```
#include<stdio.h> T N R S
int add();
int main()
{
    int s;
    s = add();
    printf("sum is %d", s);
    return 0;
}
int add()
{
    int a, b, c;
    printf("Enter two numbers");
    scanf("%d %d", &a, &b);
    c = a + b;
    return c;
}
```

return

- ① it returns value
- ② it returns control

we cannot return more than one value using return keyword.

TSRS

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