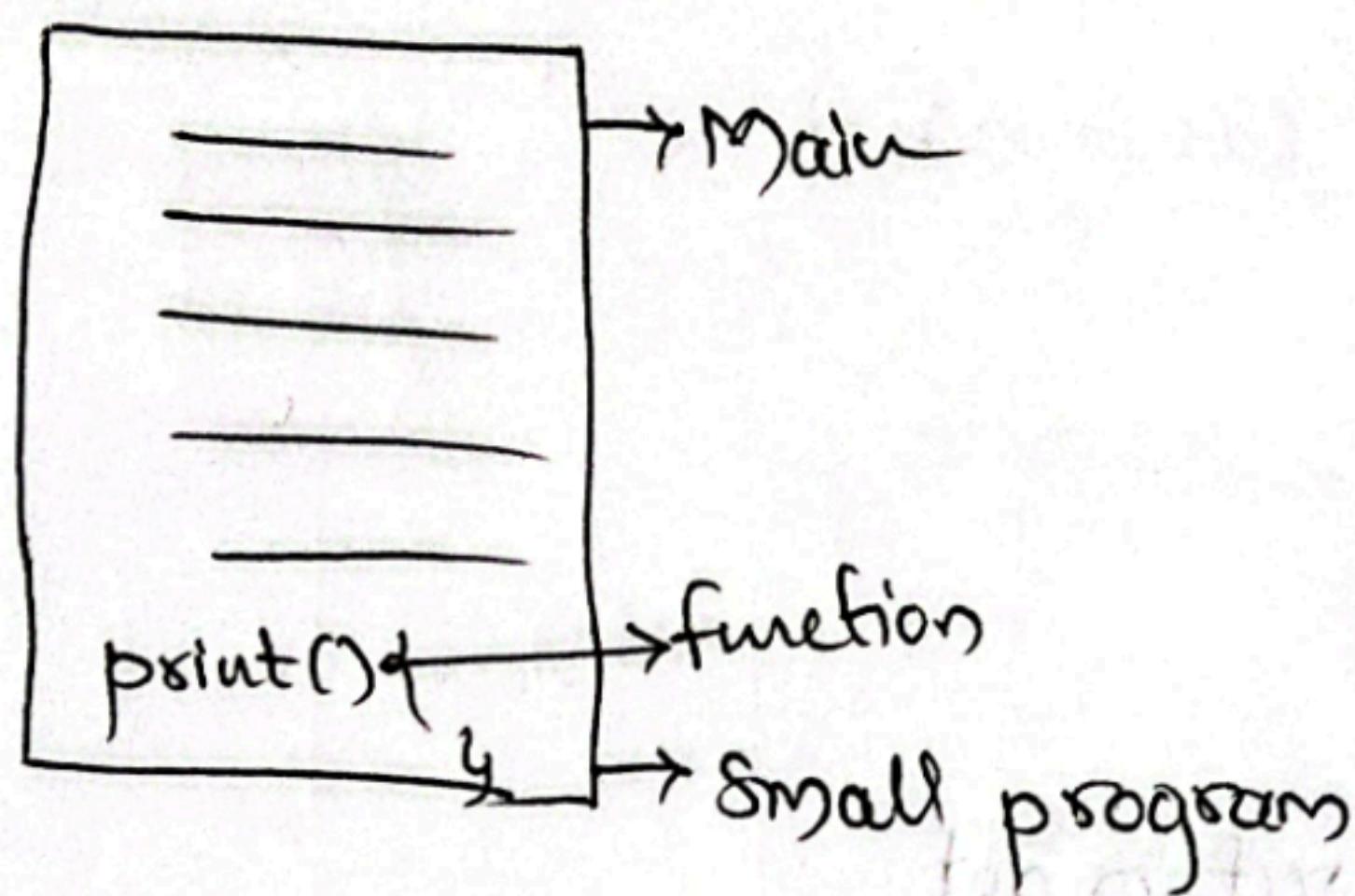


Day 2

Functions

What is two function?

Handles Repetitive task of Software program



* Function makes code "small precise & easily understandable".

- 1) Code is Reused, Time saving, Developer's money will be saved, saving Resources.
 - 2) Readability names given to functions increase code Readability.
 - 3) Function Syntax

u Syntax
<Return type> functionname^{mandatory} (input arguments)

① Return type → Return type in functions is not compulsory function can return Void(Nothing) after execution.

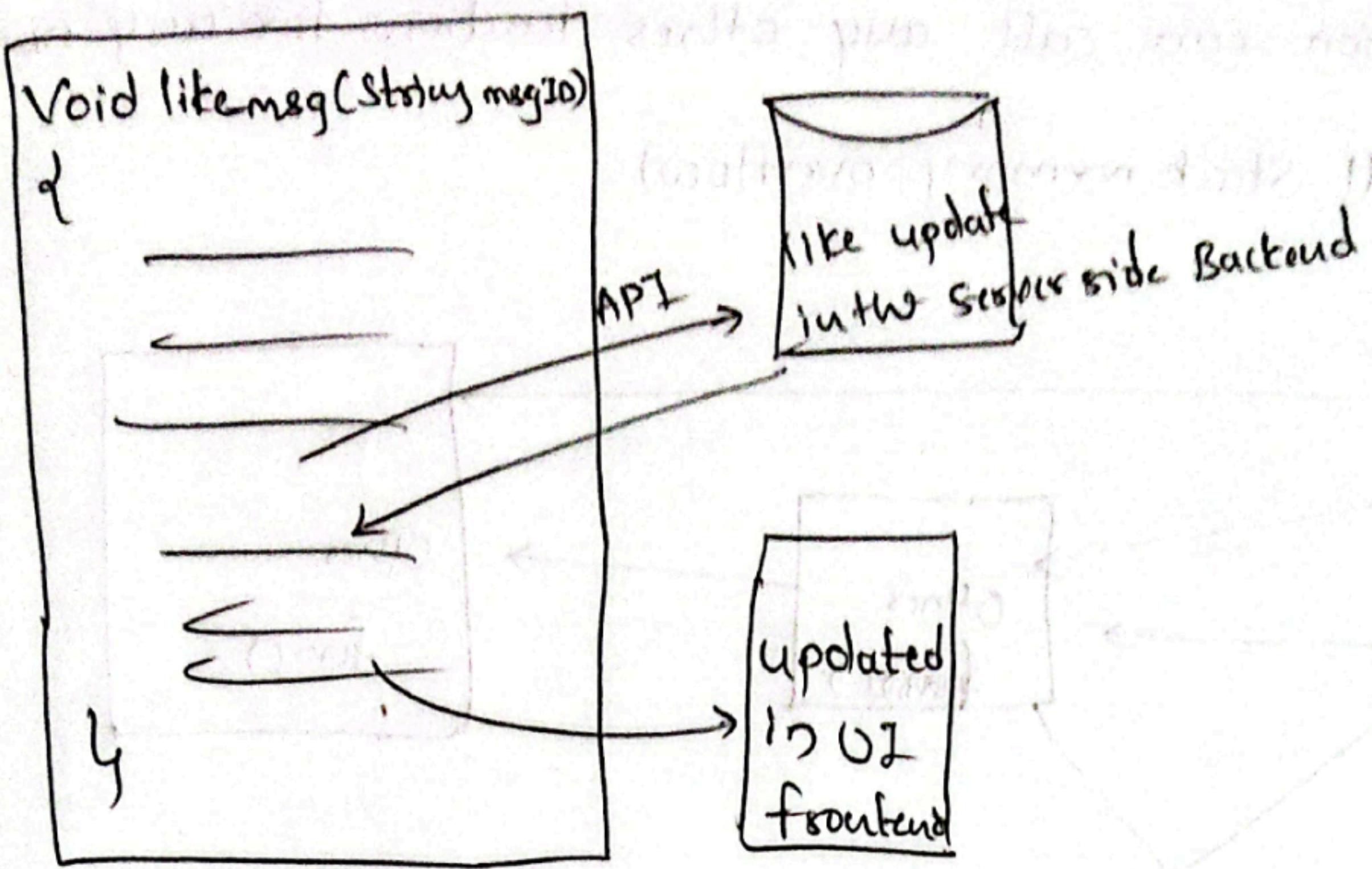
② Input arguments are also not compulsory some cases function can be execute without taking arguments also.

Examples: int

int getSum(int num1, int num2)
↑
Name
↑
Input arguments

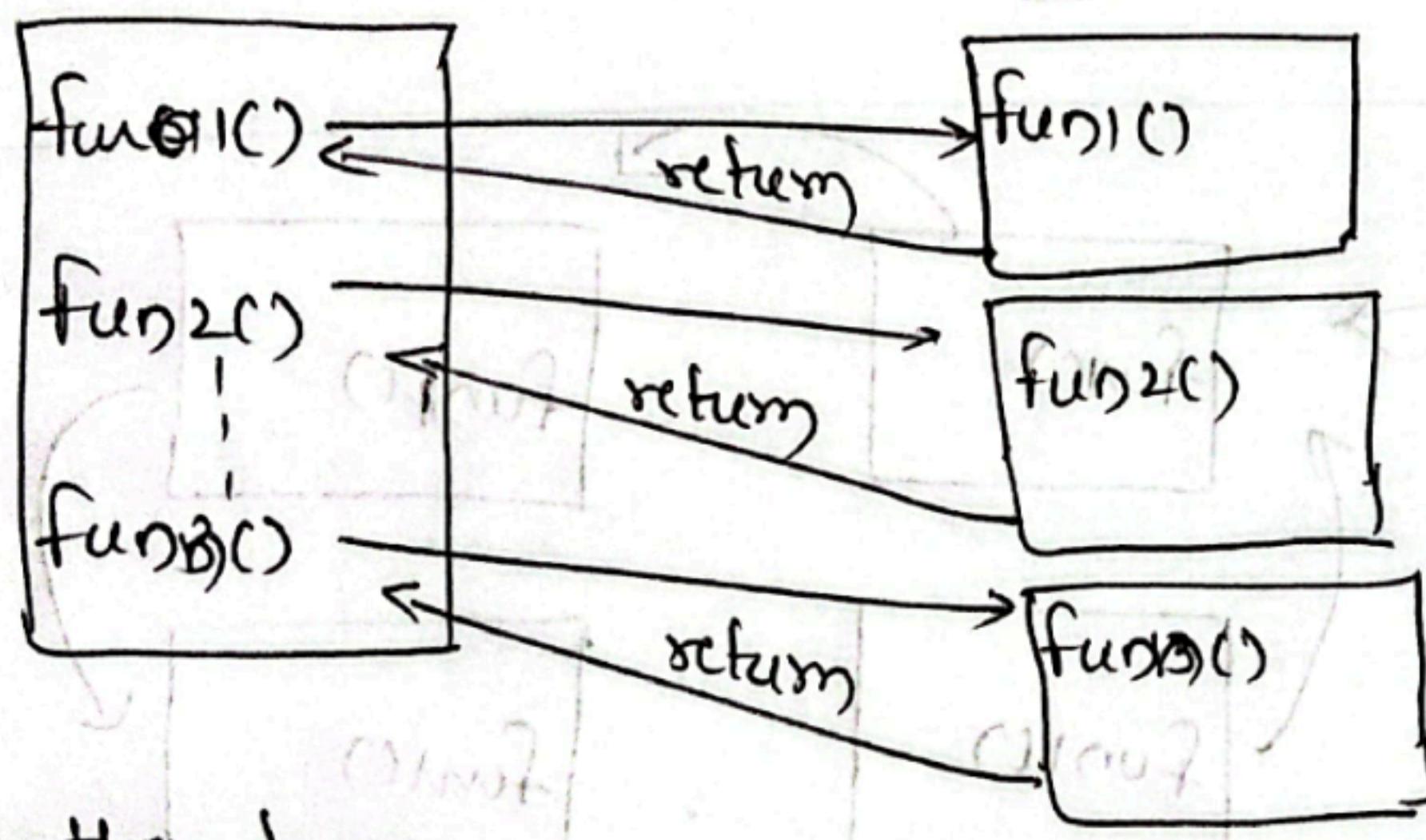
```
void    putCString(message)
```

void likeMessage(String message-ID) → arguments



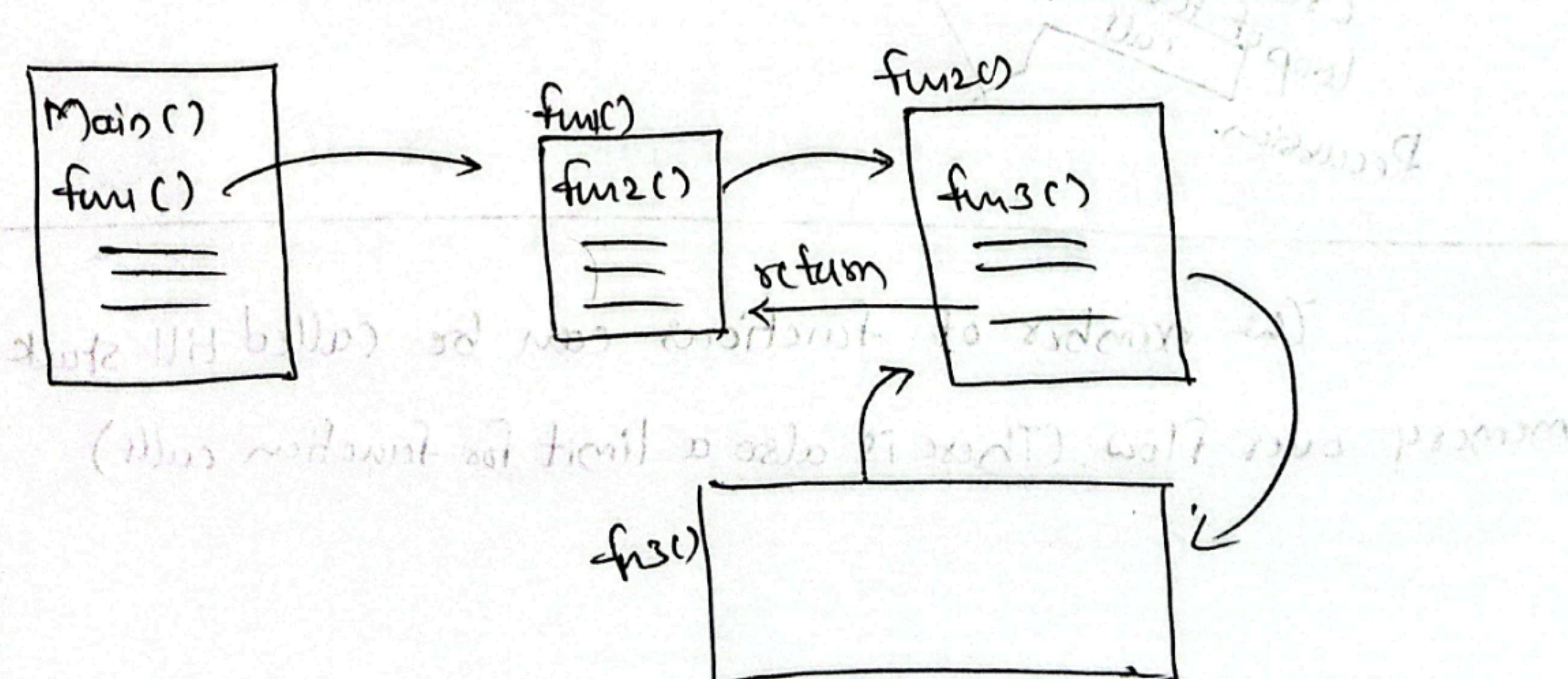
In a software Internally everything is a function

A function can call other functions. It can call 'n' numbers of other functions to perform task

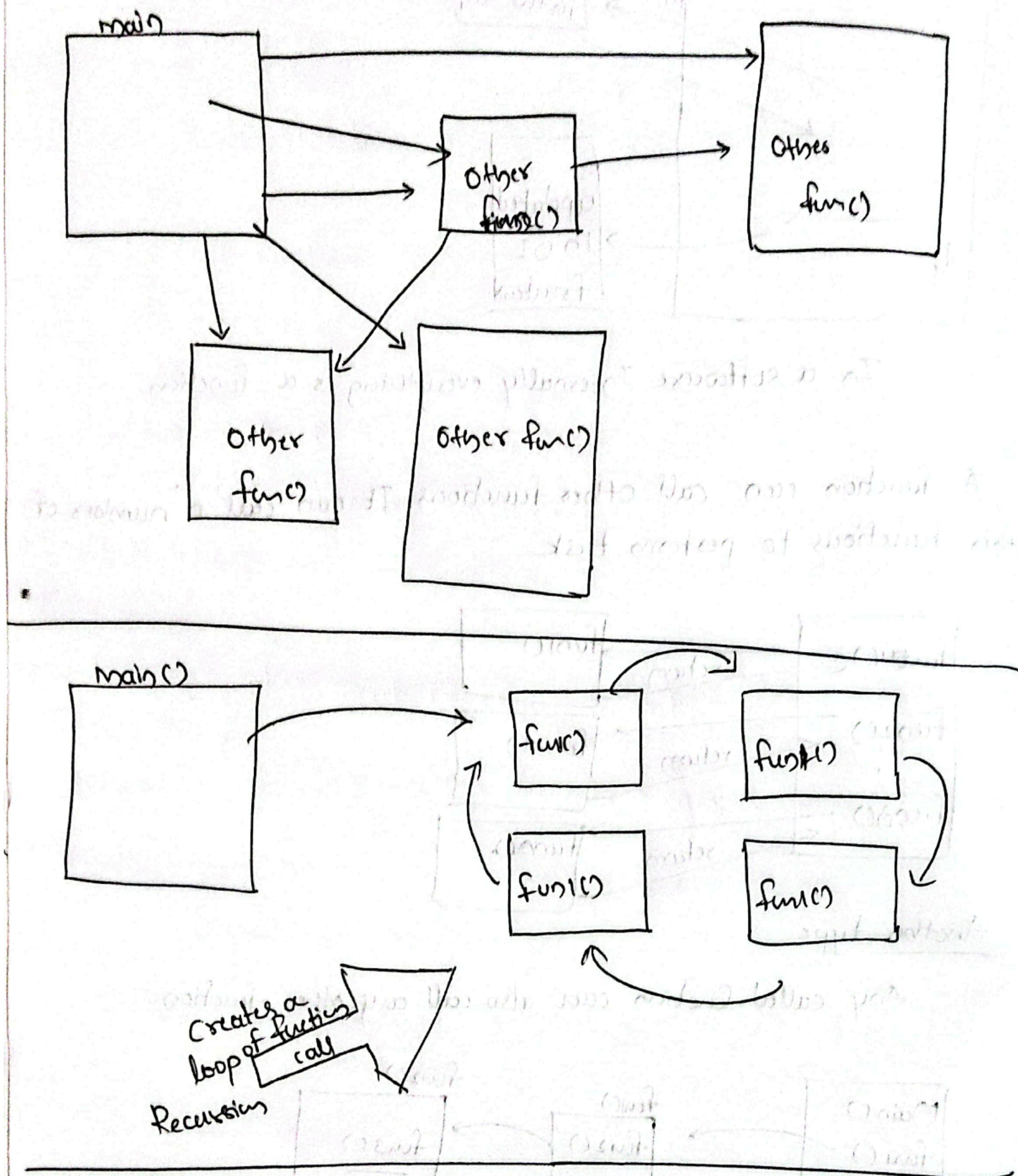


Another type

Any called function can also call any other function

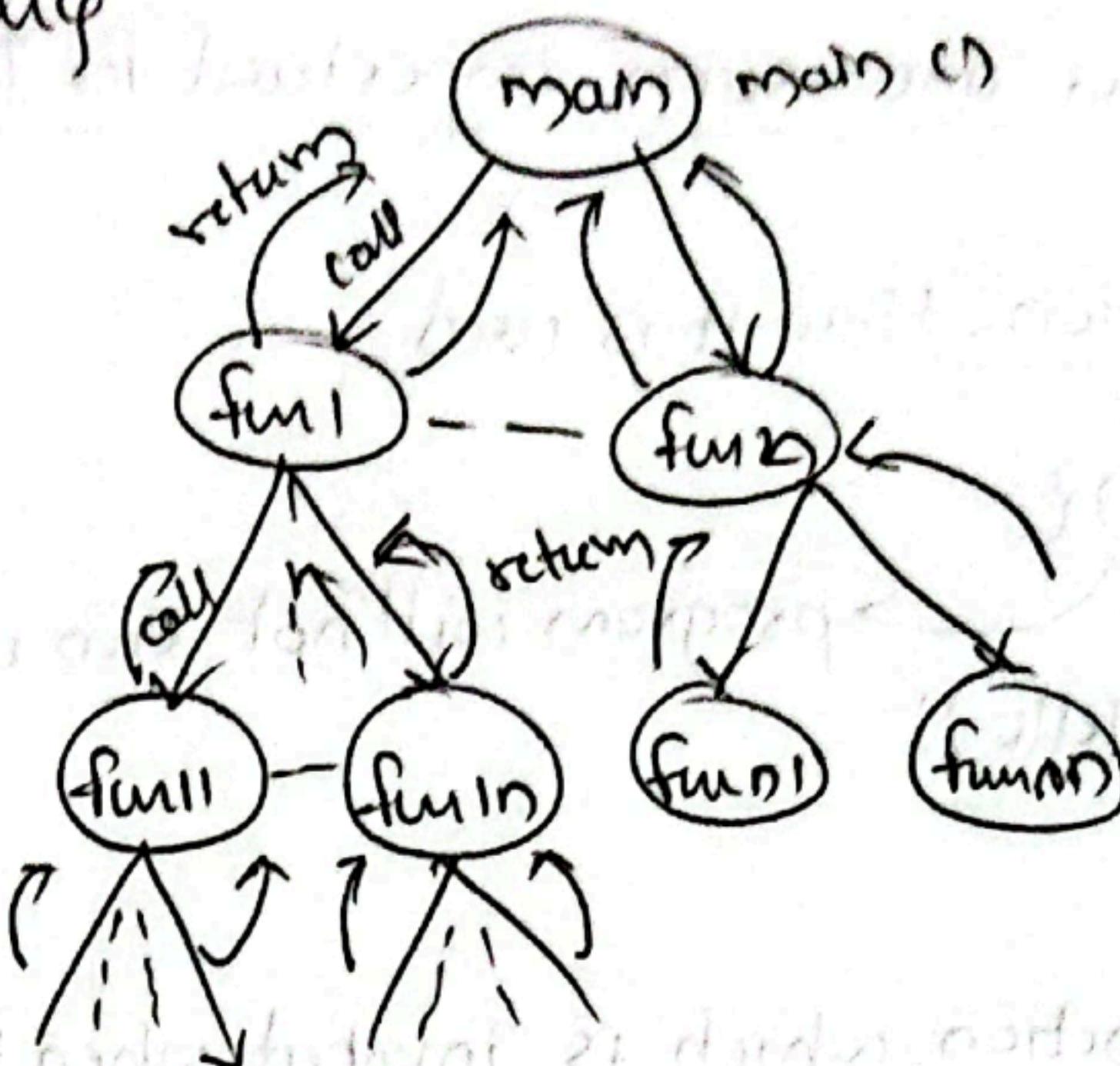
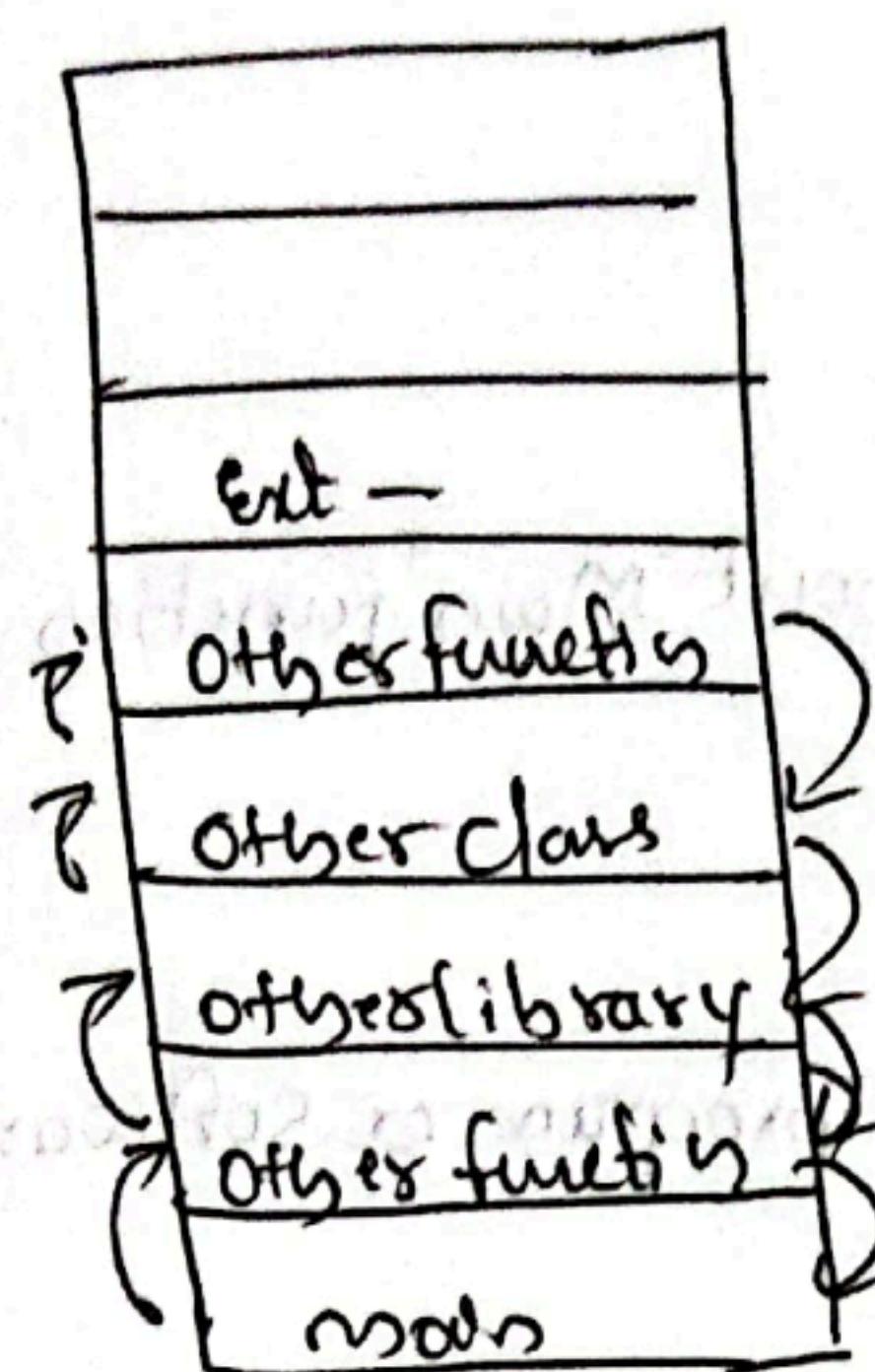


Any function can call any other functions for any number of times (until stack memory overflow)



The number of functions can be called till stack memory overflow. (There is also a limit for function calls)

function call hierarchy



1) Function declaration

Telling the compiler about function names & its return type & its arguments.

2) Definition

Writing code inside the function deciding the task of function inside.

3) Invocation/calling

Calling the function to perform its tasks and results calculation. function call can be performed by user & programmer

int get-sum(int number1, int number2); → ^{function} Declaration

int get-sum (int number1, int number2) {

 int sum = number1 + number2; } → ^{function} definition

 return sum;

decide task calculate result.

void main()

 int ans = get-sum(10, 15);

 } → ^{function calling or invocation}

 result returned

functions are super important for Interviews

What is function? How it is used.

```
int main()
```

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

```
}
```

→ program will not run without 'Main' function,

the first function which is invoked when the program or software is start & executing.

Starting point of software execution

Main is also a function we can also pass parameters to Main function.

Main
function

Input in string format

Main function can take a number of arguments in string format.

The screenshot shows the VS Code interface with the following details:

- Editor:** The main editor window displays `Functions1.java` with the following code:

```
1  public class Functions1 {
2  }
3      Run main | Debug main | Run | Debug
4      public static void main(String[] args)
5      {
6          //String StudentName = getTopperNameForSubjectGrade(1, "Maths");
7          //System.out.println(StudentName);
8
9          printStudentDetails(studentId:1);
10     }
11
12     // Who is the topper
13     // Which subject ?
14     // Which grade ?
15     // response name of the student
16
17     static String getTopperNameForSubjectGrade(int grade, String subject)
18     {
19         //Dummy implementation
20         String name = "Sangeeta";
21         return name;
22     }
23
24     // Returns array in which at 0 index boys count is present and 1 index girls count is present
25     static int[] getTotalCountOfBoysGirls(int schoolID)
26     {
27         // Dummy
28         int[] results = {500,500};
29         return results;
30     }
31
32     static void printStudentDetails(int studentId)
```

- Terminal:** The terminal window shows the output of running the code:

```
Radha
18
10
9.2
true
```

The screenshot shows the VS Code interface with the following details:

- Editor:** The main editor window displays `Namaste.java` with the following code:

```
1  public class Namaste
2  {
3      Run main | Debug main | Run | Debug
4      public static void main(String[] args)
5      {
6          enuMadudilla(); // Function invocation
7      }
8
9      // Function definition
10     static void enuMadudilla()
11     {
12         String message = "Namaste Bharat!";
13         //PrintMessage("Namaste Bharat!");
14         PrintMessage(message);
15     }
16
17     static String PrintMessage(String message)
18     {
19         System.out.println(message);
20         return message;
21     }
22 }
```

- Terminal:** The terminal window shows the output of running the code:

```
PS C:\Users\raghu> & 'C:\Users\raghu\AppData\Local\Programs\Eclipse Adoptium\jdk-21.0.8.9-hotspot\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=5005' '-cp' 'C:\Users\raghu\AppData\Local\Temp\vscodews_229d7\jdt_ws\jdt.ls-java-project\bin' 'Namaste'
Namaste Bharati
PS C:\Users\raghu>
```

Functions Part - 1



FUNCTIONS PART 1

