How do function calls work?

Let's say we have a program as shown below :

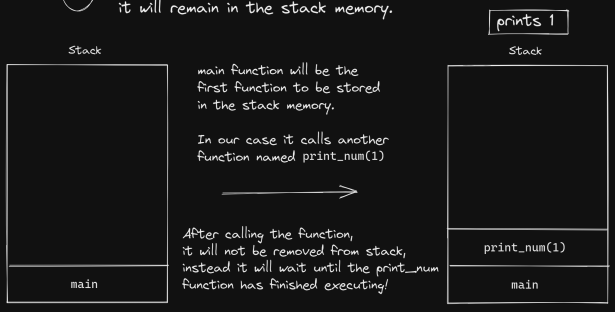
```
public class Main {

    public static void main(String[] args) {
        print_num(1);
    }

    static void print_num(int n){
        System.out.println(n);
        print_num_2(2);
    }

    static void print_num_2(int n){
        System.out.println(n);
        print_num_3(3);
    }

    static void print_num_3(int n){
        System.out.println(n);
    }
}
```

Output:

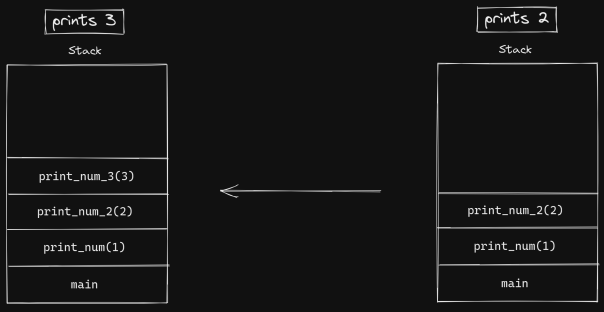
```
1
2
3
```

Let's see how this works

1 While the function is not finished executing, it will remain in the stack memory.



print_num(1) will first print 1 and will do the same thing as the main function. It will tell the print_num_2(2) function to finish it's work and until then it will just wait in the stack memory!



Now, the last function i.e print_num_3(3) does not have any other function to call and so, its work is done! Now, it will tell the previous function that its work is done!

2 When the function finishes executing, it is removed from stack and the program flow is restored to where that function was called previously!