

C Language Tutorial (Basic to Advanced)

Topics to be covered :

- Installation + Setup
- Chapter 1 - Variables, Data types + Input/Output
- Chapter 2 - Instructions & Operators
- Chapter 3 - Conditional Statements
- Chapter 4 - Loop Control Statements
- Chapter 5 - Functions & Recursion
- Chapter 6 - Pointers
- Chapter 7 - Arrays
- Chapter 8 - Strings
- Chapter 9 - Structures
- Chapter 10 - File I/O
- Chapter 11 - Dynamic Memory Allocation

Functions & Recursion (Chapter 5)

1. Function to print Hello

```
#include<stdio.h>

//function declaration/prototype
void printHello();

int main() {
    //function call
    printHello();
    return 0;
}

//function definition
void printHello() {
    printf("Hello!\n");
}
```

2. Function to calculate square of a number

```
# include <stdio.h>
//function to calculate square of a number
int calcSquare(int n);

int main() {
    int n;
    printf("enter n : ");
    scanf("%d", &n);
    printf("square is : %d", calcSquare(n));
    return 0;
}

int calcSquare(int n) {
    return n * n;
}
```

3. Function to calculate n factorial (using recursion)

```
# include <stdio.h>
//function to print factorial of n
int factorial(int n);

int main() {
    int n;
    printf("enter n : ");
    scanf("%d", &n);
    printf("factorial is : %d", factorial(n));
    return 0;
}

int factorial(int n) {
    if(n == 0) {
        return 1;
    }
    int factnml = factorial(n-1);
    int factn = factnml * n;
    return factn;
}
```