C Language Tutorial
(Basic to Advanced)

Topics to be covered :

Arrays
(Chapter 7)

1. **Syntax**

```c
# include <stdio.h>

int main() {
    int marks[3];
    printf("physics : ");
    scanf("%d", &marks[0]);

    printf("chem : ");
    scanf("%d", &marks[1]);

    printf("math : ");
    scanf("%d", &marks[2]);

    printf("physics = %d, ", marks[0]); //physics
    printf("chem = %d, ", marks[1]);  //chem
    printf("math = %d \n", marks[2]); //math
```

```
    return 0;
}
```

2. Pointer Arithmetic

```c
# include <stdio.h>

int main() {

    int age = 22;
    int *ptr = &age;

    int _age = 25;
    int *_ptr = &_age;

    printf("%u\n", ptr);
    ptr++;
    printf("%u\n", ptr);
    ptr--;
    printf("%u\n", ptr);
    ptr = ptr - _ptr;
    printf("%u\n", ptr);

    ptr = &_age;
    printf("%d\n", ptr == _ptr);

    return 0;
}
```

3. Accessing an Array

```c
# include <stdio.h>

void printNumbers(int *arr, int n);
void _printNumbers(int arr[], int n);

int main() {
    int arr[] = {1, 2, 3, 4, 5, 6};
    printNumbers(arr, 6);
    printNumbers(arr, 6);
    return 0;
}
```

```c
void printNumbers(int *arr, int n) {
    for(int i=0; i<n; i++) {
        printf("%d : %d\n", i, arr[i]);
    }
}

void _printNumbers(int arr[], int n) {
    for(int i=0; i<n; i++) {
        printf("%d : %d\n", i, arr[i]);
    }
}
```