SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

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DEPARTMENT OF CSE

23ITT101-PROGRAMMING IN C AND DATA STRUCTURES
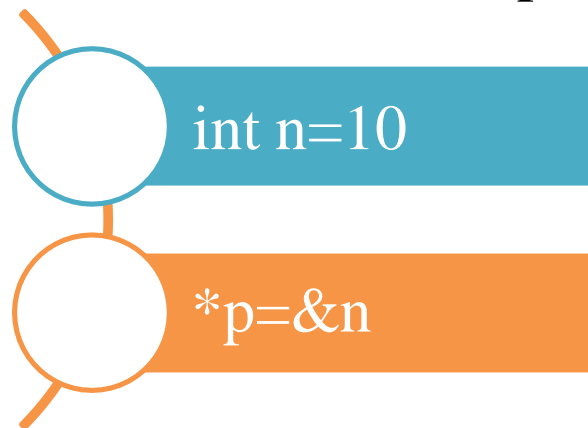
I YEAR - II SEM

UNIT 3 – ARRAYS AND INTRODUCTION TO DATA STRUCTURES

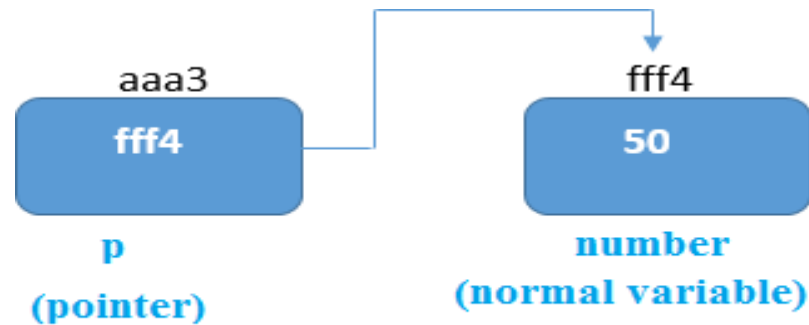TOPIC – Pointers, Call by value and Call by Reference

Pointers

❑ The pointer in C language is a variable which stores the address of another variable.

❑ This variable can be of type int, char, array, function, or any other pointer.

❑ The size of the pointer depends on the architecture.

<u>Define a pointer</u>

int n=10

*p=&n

Declare a pointer

int *a;//pointer to int
char *c;//pointer to char

Example

```c
1.#include<stdio.h>
2.void main(){
3.int n=50;
4.int *p;
5.p=&n;
6.printf("Address of p variable is %x \n",p);

7.printf("Value of p variable is %d \n",*p);
8.getch();
9.}
```

OUTPUT

Address of p variable is fff4
Value of p variable is 50

Back to function call

- Function can be call in two ways:

Call by value

Call by reference

Call by value

```c
#include <stdio.h>
void swap(int x, int y);
void main () {
   /* local variable definition */
    int a = 100;
    int b = 200;
printf("Before swapping, a : %d\n b:%d\n,a ,b);
   swap(a, b);
   printf("After swapping, value of a : %d\nb : %d\n", a,b);
   }
void swap(int x, int y) {
 int temp;
temp = x;
   x = y;
   y = temp;
}
```

Call by Reference

```c
#include <stdio.h>
void main () {
  int a = 100;
  int b = 200;
 printf("Before swap, value of a : %d\nb : %d\n", a,b );
 swap(&a, &b);
 printf("After swap, value of a : %d\nb : %d\n", a,b);
   }
void swap(int *x, int *y) {
  int temp;
temp = *x;
 *x = *y;
 *y = temp;
}
```