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CP LAB ASSIGNMENT 6

SECTION:

THEORY:

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. However, in 32-bit architecture the size of a pointer is 2 byte. The pointer in c language can be declared using * (asterisk symbol). It is also known as an indirection pointer used to dereference a pointer.

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

There are many applications of pointers in the C language.

- Dynamic memory allocation:

In c language, we can dynamically allocate memory using malloc() and calloc() functions where the pointer is used.

- Arrays, Functions and Structures:

Pointers in c language are widely used in arrays, functions, and structures. It reduces the code and improves the performance.

(**a**)
AIM: To swap two numbers.

PROGRAM C CODE:

```
#include <stdio.h>
void swap (int* , int*);
int main() {
   int a, b;
   printf("Enter values for a and b\n");
   scanf("%d%d", &a, &b);
   printf("\n\nBefore swapping: a = %d and b = %d\n", a, b);
   swap(&a, &b);
   printf("\nAfter swapping: a = %d and b = %d\n", a, b);
   return 0;
}
void swap(int *x, int *y)
{
   int temp;
   temp = *x;
   *x   = *y;
   *y   = temp;
}
```

OUTPUT:

```
Enter values for a and b
4 7


Before swapping: a = 4 and b = 7

After swapping: a = 7 and b = 4
```