POINTER AND FUNCTION

PASSING ARGUMENT

1. CALL BY VALUE
2. CALL BY ADDRESS OR POINTER

3. CALL BY REFERENCE (ONLY IN C++)

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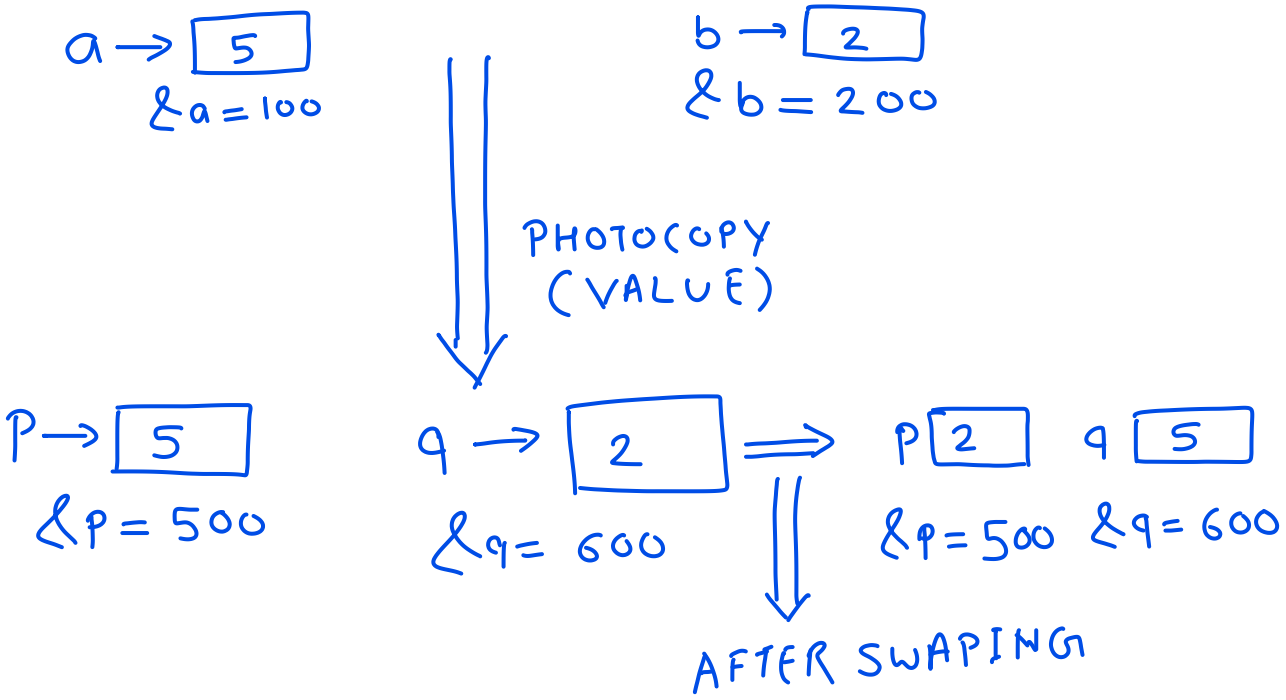
1. CALL BY VALUE

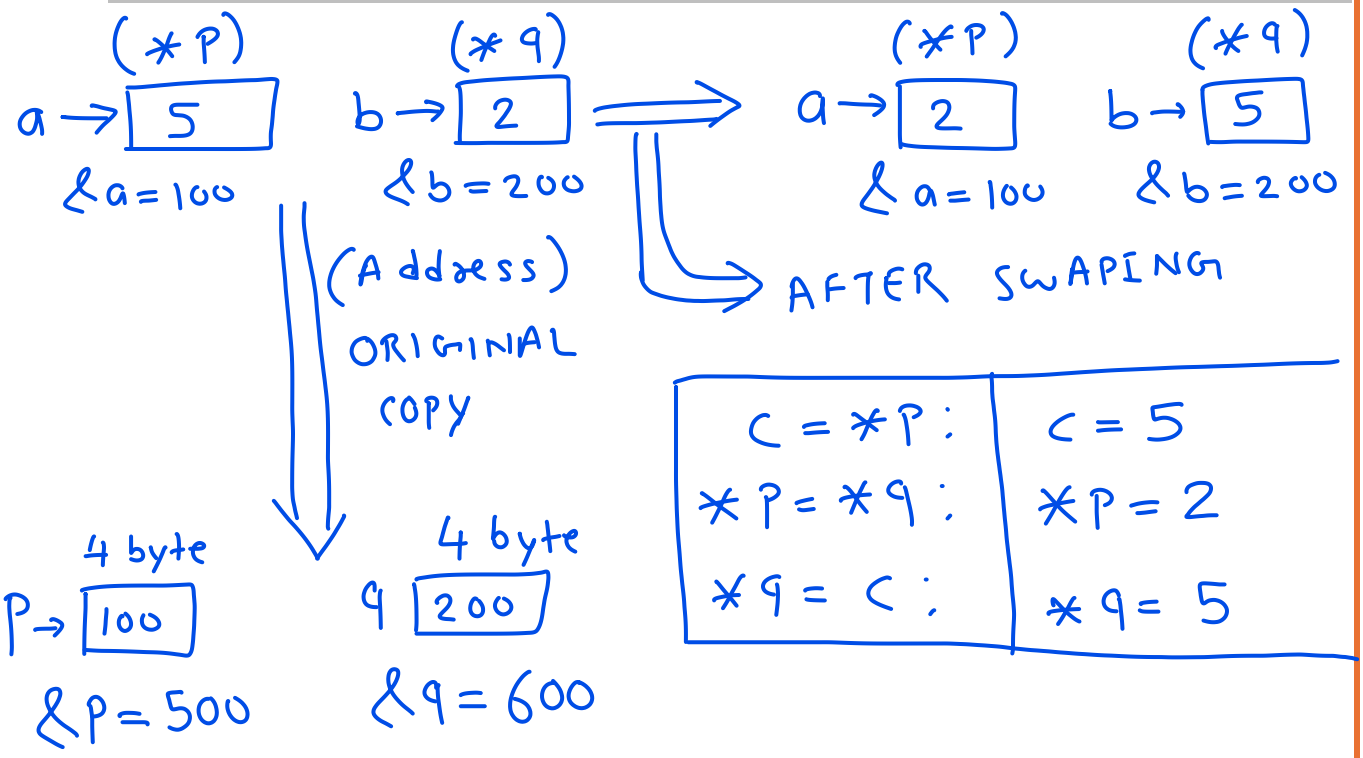
```
#include<stdio.h>

void   swap( int  p , int  q);

int     main()
{
        int  a = 5 , b = 2 ;

         swap( a , b ) ; // value

        printf(" AFTER SWAP \n");

            printf(" a = %d \n", a);  //  5      NO  CHANGE

                printf(" b = %d \n", b);  //  2

}
```

```
void   swap ( int  p , int  q )
{
        int  c ;

        c = p ;   // c = 5

         p = q ;  //  p = 2

         q = c ; //   q = 5
}
```



2. CALL BY ADDRESS OR POINTER

```
#include<stdio.h>

 void   swap( int  *p , int  *q );
  int    main()
 {
            int  a = 5 , b = 2;

            swap( &a , &b ) ; // ADDRESS

            printf(" AFTER SWAP \n");

            printf(" a = %d \n ", a);   // 2        CHANGE

             printf(" b = %d \n ", b);  //  5

 }
void   swap( int   *p , int  *q ) // int*  p = &a ; // declare & initiaze
 {
            int c ;

            c  = *p ;   //  c = 5

            *p  = *q ;  //  *p = 2

            *q  =  c ; //   *q = 5
 }
```



DECLARATION AND INITAIZATION OF POINTOR VARIABLE

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int *p = &a ; // int* p = &a;

TYPE OF P VARIABLE --> int*
int a;

TYPE OF a VARIABLE --> int
int &b;

TYPE OF b VARIABLE --> int &

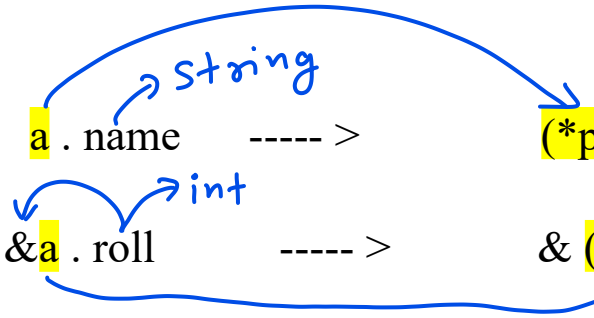
POINTER AND STRUCTURE

INPUT AND PRINT ONE STUDENT RECORD

```
#include<stdio.h>
  struct  student
  {
          char  name[10];
          int     roll;
  };
  int    main()
  {
        struct  student   a , *p;

        p = &a;

     printf(" ENTER NAME AND ROLL \n ");

       scanf("%s%d", p -> name, &p -> roll);

      printf(" NAME = %s \n ", p -> name );

     printf(" ROLL = %d \n ", p -> roll );
  }
```

NORMAL VARIABLE **POINTER VARIABLE**

struct student a; struct student *p; p = &a;



a . name ----- > (*p) . name or p -> name

&a . roll ----- > & (*p) . roll or &p -> roll

(.) OPERATOR -> (DEREFERENCING OPERATOR)

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* . ==> REPLACE ->

---

a.name
&a.roll
*/

POINTER AND ARRAY OF STRUCTURE

```
#include<stdio.h>
   struct  student
  {
            char  name[10];
            int    roll;
  };
  int     main()
  {
    struct  student  a[10] , *p;
       int   n ;
             printf(" ENTER NO. OF  RECORDS \n ");
             scanf("%d", &n);

       for(  p = a ; p < (a+n) ; p++ )
 {
      printf(" ENTER NAME AND ROLL \n " );
       scanf("%s%d", p -> name, &p -> roll);
}
       for(  p = a ; p < (a+n) ; p++ )
        {
           printf(" NAME = %s \n " , p -> name ) ;
           printf(" ROLL   = %d \n " , p -> roll  ) ;
        }
  }
```