

## Practical exercises. Interchanging data between two function in C language. Passing data and arrays

### Ex.1: Searching an element of array by using function

```
#include <stdio.h>
int searchel( int *A, int n, int key)
{
    int i;
    for(i=0; i<n; i++)
    {
        if (A[i] == key)
        { return i; }
    }
    return -1;
}
int main( )
{
    int A[50], n, i, key, ind;
    clrscr( );
    printf("\n Enter number of elements : ");
    scanf("%d", &n);
    puts ("\n Enter elements of array: ");
    for (i=0; i<n; i++)
    {
        scanf("%d", &A[i]);
    }
    printf("\n Enter key of searching element:");
    scanf("%d", &key);
    ind= searchel(A,n, key); // function call
    puts("\n Result of searching:");
    if (ind >=0)
    {printf("Position of element is:%d\n",ind+1);}
    else
    {printf(" Element was not found\n");}
    return 0;
}
```

### Ex.2: Sorting an array by using function

```
#include <stdio.h>
void bubblesort( int *A, int n)
{ int i, k,t;
  for(i=0; i<n-1; i++)
  {
      for( k=0; k<n-1-i; k++)
      { if (A[k]>A[k+1])
        {
            t=A[k];
            A[k]=A[k+1];
            A[k+1]=t;
        }
      }
  }
  return;
}
int main( )
{
    int A[50], n, i;
    clrscr( );
    printf("\n Enter number of elements : ");
    scanf("%d", &n);
    puts ("\n Enter elements of array: ");
    for (i=0; i<n; i++)
    { scanf("%d", &A[i]); }
    bubblesort(A, n); // function call
    puts("\n Result:");
    printf(" Sorted array:\n");
    for (i=0;i<n;i++)
    { printf(" %d\n", A[i]); }
    return 0;
}
```

**Ex.3: Finding max element of array and its position by using function**

```
#include <stdio.h>
int maxel( int  A[ ], int n, int *smax)
{
    int max, i;
    max = A[0];
    *smax = 0;
    for(i=0; i<n; i++)
    {
        if (A[i] >max)
        {
            max= A[i];
            *smax = i;
        }
    }
    return max;
}
int main( )
{
    int A[50], n, mx, smx, i;
    clrscr( );
    printf("\n Enter number of elements : ");
    scanf("%d", &n);
    puts ("\n Enter elements of array: ");
    for (i=0; i<n; i++)
    { scanf("%d", &A[i]);}
    mx= maxel(A, n, &smx); // function call
    puts("\n Result:");
    printf("\n max element is %d ", mx);
    printf("\n  and its position  is %d", smx+1);
    return 0;
}
```

**Ex.4: The same Ex.3 by using pointer parameters of the function**

```
#include <stdio.h>
void maxelp(int*A, int n, int*max, int*smax)
{
    int i;
    *max = A[0];
    *smax = 0;
    for(i=0; i<n; i++)
    {
        if (A[i] >*max)
        {
            *max= A[i];
            *smax = i;
        }
    }
    return ;
}
int main( )
{
    int A[50], n, mx, smx, i;
    clrscr( );
    printf("\n Enter number of elements : ");
    scanf("%d", &n);
    puts ("\n Enter elements of array: ");
    for (i=0; i<n; i++)
    { scanf("%d", &A[i]);}
    maxelp(A,n,&mx,&smx);
    puts("\n Result:");
    printf("\n max element is %d\n", mx);
    printf("\n  and its position  is %d", smx+1);
    return 0;
}
```