

## Modified bubble sort

```
#include <stdio.h>
#include <stdlib.h>

void modifiedBubbleSort(int *arr, int n)
{
    int i, j;
    int swapped = 1;
    for (i = 0; i < n - 1 && swapped == 1; i++)
    {
        swapped = 0;
        for (j = 0; j < n - i - 1; j++)
        {
            if (arr[j] > arr[j + 1])
            {
                int temp = arr[j];
                arr[j] = arr[j + 1];
                arr[j + 1] = temp;
                swapped = 1;
            }
        }
    }
}

int main()
{
    int n, i;
    printf("Enter the number of elements in the array: ");
    scanf("%d", &n);
    int *arr = (int *)malloc(n * sizeof(int));
    printf("Enter the values in the array:\n");
    for (i = 0; i < n; i++)
    {
        scanf("%d", &arr[i]);
    }

    modifiedBubbleSort(arr, n);

    printf("Sorted array: \n");
    for (int i = 0; i < n; i++)
        printf("%d ", arr[i]);

    return 0;
}
```

## Insertion Sort

```
#include <stdio.h>
#include <stdlib.h>

void insertionSort(int *arr, int n)
{
    int i, key, j;
    for (i = 1; i < n; i++)
    {
        key = arr[i];
        j = i - 1;
        while (j >= 0 && arr[j] > key)
        {
            arr[j + 1] = arr[j];
            j = j - 1;
        }
        arr[j + 1] = key;
    }
}

int main()
{
    int n, i;
    printf("Enter the number of elements in the array: ");
    scanf("%d", &n);
    int *arr = (int *)malloc(n * sizeof(int));
    printf("Enter the values in the array:\n");
    for (i = 0; i < n; i++)
    {
        scanf("%d", &arr[i]);
    }

    insertionSort(arr, n);

    printf("Sorted array: \n");
    for (int i = 0; i < n; i++)
        printf("%d ", arr[i]);

    return 0;
}
```

## Selection Sort

```
#include <stdio.h>
#include <stdlib.h>

void selectionSort(int *arr, int n)
{
    int i, j;
    int min;
    for (i = 0; i < n - 1; i++)
    {
        min = i;
        for (j = i+1; j < n; j++)
        {
            if (arr[j] < arr[min])
            {
                min = j;
            }
            int temp = arr[min];
            arr[min] = arr[i];
            arr[i] = temp;
        }
    }
}

int main()
{
    int n, i;
    printf("Enter the number of elements in the array: ");
    scanf("%d", &n);
    int *arr = (int *)malloc(n * sizeof(int));
    printf("Enter the values in the array:\n");
    for (i = 0; i < n; i++)
    {
        scanf("%d", &arr[i]);
    }

    selectionSort(arr, n);
}
```

```
printf("Sorted array: \n");  
for (int i = 0; i < n; i++)  
    printf("%d ", arr[i]);  
  
return 0;  
}
```