DATA STRUCTURE

PROGRAMS:

1.Bubble Sort

```
#include <stdio.h>

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

void printArray(int arr[], int n) {
    int i;
    for (i = 0; i < n; i++) {
        printf("%d ", arr[i]);
    }
    printf("\n");
```

```
}

int main() {
    int arr[] = {64, 34, 25, 12, 22, 11, 90};
    int n = sizeof(arr)/sizeof(arr[0]);
    bubbleSort(arr, n);
    printf("Sorted array: \n");
    printArray(arr, n);
    return 0;
}
```

OUTPUT:

```
Sorted array:
11 12 22 25 34 64 90
```

2.Selection Sort

```
#include <stdio.h>

void selectionSort(int arr[], int n) {
    int i, j, minIdx, temp;


    for (i = 0; i < n-1; i++) {
        minIdx = i;
        for (j = i+1; j < n; j++)
```

```
            if (arr[j] < arr[minIdx])
                minIdx = j;

        temp = arr[minIdx];
        arr[minIdx] = arr[i];
        arr[i] = temp;
    }
}

void printArray(int arr[], int n) {
    int i;
    for (i = 0; i < n; i++) {
        printf("%d ", arr[i]);
    }
    printf("\n");
}

int main() {
    int arr[] = {64, 25, 12, 22, 11};
    int n = sizeof(arr)/sizeof(arr[0]);
    selectionSort(arr, n);
    printf("Sorted array: \n");
    printArray(arr, n);
    return 0;
}
```

OUTPUT:

Sorted array:

11 12 22 25 64