DATA STRUCTURE

DAY 12 – 08/08/2024

1.Bubble sort

Program:

```
#include <stdio.h>
void bubbleSort(int arr[], int n) {
    int i, j, temp;
    for (i = 0; i < n-1; i++) {
        int swapped = 0;
        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;
                swapped = 1;
            }
        }
        if (!swapped)
            break;
    }
}
void printArray(int arr[], int size) {
    int i;
    for (i = 0; i < size; 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]);
    printf("Original array:\n");
    printArray(arr, n);
    bubbleSort(arr, n);
    printf("Sorted array:\n");
    printArray(arr, n);
    return 0;
}
```

OUTPUT:

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

2.selected sort

PROGRAM:

```
#include <stdio.h>
 void selectionSort(int arr[], int n) {
    int i, j, minIndex, temp;
     for (i = 0; i < n-1; i++) {
        minIndex = i;
        for (j = i+1; j < n; j++) {
            if (arr[j] < arr[minIndex]) {
                minIndex = j;
            }
        }
        if (minIndex != i) {
            temp = arr[i];
            arr[i] = arr[minIndex];
```

```
            arr[minIndex] = temp;
        }
    }
}
void printArray(int arr[], int size) {
    int i;
    for (i = 0; i < size; 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]);
    printf("Original array:\n");
    printArray(arr, n);
    selectionSort(arr, n);
    printf("Sorted array:\n");
    printArray(arr, n);
    return 0;
}
```

OUTPUT:

Original array:

64 34 25 12 22 11 90

Sorted array:

11 12 22 25 34 64 90