

Problem:4

Given an array of integers **arr**, the task is to sort the array in ascending order and return it, **without using any built-in** functions.

Ans:

Code:

```
#include <stdio.h>

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

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

int main() {
    int arr[] = {5, 2, 4, 3, 1};
    int n = sizeof(arr) / sizeof(arr[0]);
    printf("Original array: ");
    printArray(arr, n);
    insertionSort(arr, n);
    printf("Sorted array: ");
    printArray(arr, n);
    return 0;
}
```