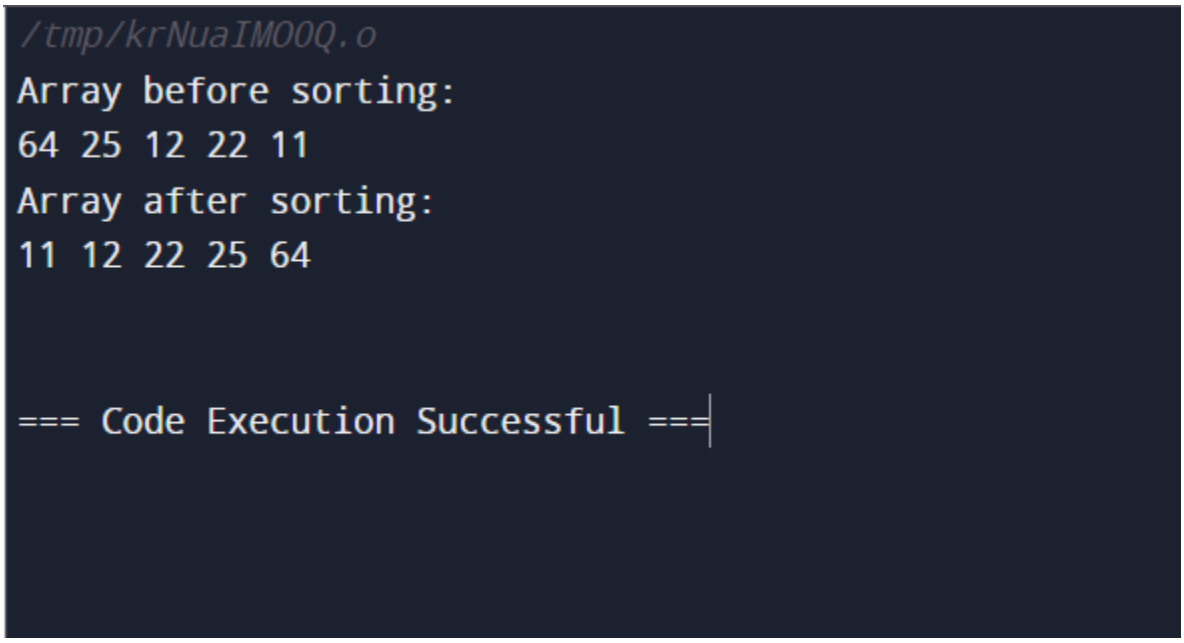
EXPERIMENT NO.1

Insertion Sort Algorithm

Program:-

```
#include <stdio.h>

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

        /* Move elements of arr[0..i-1], that are greater than key,
           to one position ahead of their current position */
        while (j >= 0 && arr[j] > key) {
            arr[j + 1] = arr[j];
            j = j - 1;
        }
        arr[j + 1] = key;
    }
}

int main() {
    int arr[] = {64, 25, 12, 22, 11};
    int n = sizeof(arr) / sizeof(arr[0]);
    printf("Array before sorting:\n");
    for (int i = 0; i < n; i++) {
        printf("%d ", arr[i]);
    }
    printf("\n");

    insertionSort(arr, n);

    printf("Array after sorting:\n");
    for (int i = 0; i < n; i++) {
        printf("%d ", arr[i]);
    }
    printf("\n");

    return 0;
}
```

Output:-


/tmp/krNuaIMOOQ.o
Array before sorting:
64 25 12 22 11
Array after sorting:
11 12 22 25 64
=== Code Execution Successful ===