

2. Insertion sort:

Program:

```
def insertion_sort(arr):
    # Traverse through 1 to len(arr)
    for i in range(1, len(arr)):
        key = arr[i]
        # Move elements of arr[0..i-1], that are greater than key,
        # to one position ahead of their current position
        j = i - 1
        while j >= 0 and key < arr[j]:
            arr[j + 1] = arr[j]
            j -= 1
        arr[j + 1] = key

    return arr

# Example usage:
arr = [12, 11, 13, 5, 6]
sorted_arr = insertion_sort(arr)
print("Sorted array:", sorted_arr)
```

Output:

```
"C:\Program Files\Python312\python.exe" "C:\Work Space\DAA\DAA COADS.PYTHON\program 75.py"
Sorted array: [5, 6, 11, 12, 13]

Process finished with exit code 0
```

Time complexity:

$O(n^2)$