

2. Bubble Sort:

Program:

```
def bubble_sort(arr):
    n = len(arr)
    # Traverse through all array elements
    for i in range(n):
        # Last i elements are already in place
        for j in range(0, n - i - 1):
            # Traverse the array from 0 to n-i-1
            # Swap if the element found is greater than the next element
            if arr[j] > arr[j + 1]:
                arr[j], arr[j + 1] = arr[j + 1], arr[j]
    return arr
```

Example usage:

```
arr = [64, 34, 25, 12, 22, 11, 90]
```

```
sorted_arr = bubble_sort(arr)
```

```
print("Sorted array:", sorted_arr)
```

Output:

```
"C:\Program Files\Python312\python.exe" "C:\Work Space\DAA\DAA COADS.PYTHON\program 74.py"
Sorted array: [11, 12, 22, 25, 34, 64, 90]

Process finished with exit code 0
```

Time complexity:

$O(n^2)$