

PHASE 1 PRACTICE ASSISTED PROJECT

6. Writing a program in Java implementing the insertion sort algorithm

```
public class InsertionSort {  
  
    public static void insertionSort(int[] arr) {  
        int n = arr.length;  
  
        for (int i = 1; i < n; i++) {  
            int key = arr[i];  
            int 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--;  
            }  
  
            arr[j + 1] = key;  
        }  
    }  
  
    public static void main(String[] args) {  
        int[] arr = {64, 34, 25, 12, 22, 11, 90};  
  
        System.out.println("Original array: ");  
        printArray(arr);  
  
        insertionSort(arr);  
  
        System.out.println("Sorted array: ");  
        printArray(arr);  
    }  
  
    public static void printArray(int[] arr) {  
        for (int i = 0; i < arr.length; i++) {  
            System.out.print(arr[i] + " ");  
        }  
        System.out.println();  
    }  
}
```

OUTPUT-

```
Console ×  
<terminated> InsertionSort [Java Application] C:\Program Files\Java\jdk-20\bin\javaw.exe (18-May-2023, 10:09:08 am – 10:09:08 am) [pid: 3560]  
Original array:  
64 34 25 12 22 11 90  
Sorted array:  
11 12 22 25 34 64 90
```